THE STANDARD OF LIVING IN JAPAN

BY

KOKICHI MORIMOTO

A DISSERTATION

Submitted to the Board of University Studies of The Johns Hopkins University in Conformity with the Requirements for the Degree of Doctor of Philosophy

1916

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PREFACE

The field for studies of this kind in Japan is still barren of material. With the exception of some little data, the material for this inquiry was collected by me in the years 1913 to 1915, during which period I was also engaged in teaching political economy at the Imperial University, Sapporo, Japan. A wider range of better balanced data is necessary for a thorough inquiry; however, without more extensive statistical work on a larger scale, furthered by aid from public institutions, no work of this nature could be so complete as might be desired.

I wish to express my obligation to those who have helped me. Especially am I grateful to Professor J. H. Hollander and Professor G. E. Barnett for advice and for criticism of the manuscript, and to my friend, Miss Margaret Schneder, Professor of English at Cedarville College, Cedarville, Ohio, for her kindness in reading the manuscript.

K. M.

THE STANDARD OF LIVING IN JAPAN

PART I

INTRODUCTORY

CHAPTER I

Importance of the Study

In entering upon the study of the standard of living in Japan it may be well to consider at the outset the importance of the subject. It has a twofold aspect: the theoretical, and the practical. Theoretically the study of the standard of living is of great use for the advancement of political economy as a science, since an exact knowledge of human living is fundamental in economic investigation. As Roscher has well said, "Ausgangspunkt, wie Zielpunkt unserer Wissenschaft ist der Mensch."[1] What is called national economy, social economy, or world economy is nothing more than collective economy with family economy as the unit. The essential problem of family economy is to find out the right ways of getting a living; in other words, it is the study of human wants and the efforts made for their satisfaction. These wants can be ascertained with a certain degree of exactness from statistics of family income and expenditure. Indeed, a knowledge of human wants is the beginning of political economy, and "the goal of all economic development is to make wealth abundant and to make man more able to use wealth correctly."[2] Hitherto, however, many economists have devoted their study chiefly

[1] W. Roscher, Volkswirthschaftslehre, B.I., s. 1.
[2] E. R. A. Seligman, Principles of Economics, p. 15.

to the theory of production in a broad sense. For example, Pierson says: "There is no such thing as a theory of consumption, in the sense of a branch of the science of Economics."[3] These writers pay little attention to the fact that production is important only in its relation to consumption, and they forget that consumption is, as Say, Gide, Walker, and others maintain, the primary motive of all economic activities.

A great deficiency in our economic knowledge results from the fact that only a few scientific investigations in the problems of economic consumption, particularly in the matter of family consumption, have been made.[4] As a consequence, although such subjects as the high cost of living, efficient living, minimum wage, and poverty are demanding the careful attention of economists, only a few studies based on reliable statistical data are available.[5]

It must be stated that from another point of view the study of the standard of living exerts a great influence

[3] N. G. Pierson, Principles of Economics, p. 42.

[4] The most valuable work in the field is S. N. Patten, Consumption of Wealth.

[5] The best general works on the standard of living are:

Charles Booth, Life and Labor of the People in London. London, 1889–1892.

Mrs. B. Bosanquet, Standard of Life. London, 1899.

R. C. Brooks, Report of the Committee on Teachers' Salaries and Cost of Living. 1913.

R. C. Chapin, Standard of Living among Workingmen's Families in New York City. New York, 1909.

Eighteenth Annual Report of the U. S. Commissioner of Labor, Cost of Living and Retail Prices of Food.

W. Gerloff, Verbrauch u. Verbrauchbelastung kleiner u. mittlerer Einkommen in Deutschland, Jahrbücher fur National Oekonomie u. Statistik, 3 Folge, Bd. 35, S. 1 u. 145.

Great Britain, Board of Trade, Cost of Living and the Working Classes —Industrial towns of the United Kingdom, 1908; French towns, 1909; Belgium, 1910; U. S. A., 1911.

H. Hagmann, 30 Wirtschaftsrechnungen von Kleinbauern und Landarbeitern. Bonn, 1911.

Kennedy et al. (University of Chicago), Study of Chicago's Stockyards Community. Vol. 3, Wages and Family Budget. 1914.

L. B. More, Wage-Earners' Budgets. New York, 1907.

S. Nearing, Financing the Wage-Earners' Family. New York, 1913.

B. S. Rowntree, Poverty. London, 1901.

B. S. Rowntree, Land and Labor (Part V, pp. 341–512). London, 1910.

F. H. Streightoff, Standard of Living among the Industrial People of America. Boston, 1911.

upon the theory of production, because the human factors of production, labor and capital, can be controlled by the standard of living. Similarly distribution must not be considered without some attention to the standard of living because the shares of distribution—that is, interest, wages, and profits—are fundamentally affected by the standard of living. It is evident, therefore, that the standard of living is the controlling element in economic activities and in economic theories as well.[6]

The practical importance of this study lies in the fact that a full knowledge of the standard of living would prove to be of practical usefulness in preventing waste. This knowledge would promote the economic welfare of a people and of a nation. The increase of national wealth is particularly important in Japan for the following reasons: (1) In the last half century Japan has made great but abnormal progress in economic conditions; she has emerged from a peaceful "closed economy" (Geschlossenenwirtschaft) into a busy "exchange economy" (Verkehrswirtschaft). The altered conditions of modern economic life demand that she have much more wealth in order to maintain her economic supremacy in the East. She then entered for the first time in her history into the complications which resulted from her economic contact with foreign countries and from keen international as well as interlocal competition. She awakened to the realization of the fact that she has to stand on a much more solid foundation of national wealth than formerly. (2) From the geographic point of view Japan is a small island country with an area of approximately 157,000 square miles. Economically she is a poor country with comparatively limited national resources; her national wealth per capita in 1913 amounted only to some 500 *yen*, while in Great Britain it is $1500, in the United States $1250, and in Germany $950. It is even less than that of Russia or of Italy, which are considered the poor nations of Europe. Japan, as a new nation in the

[6] See F. W. Sanders, Standard of Living in the Relation to Economic Theory and Land Nationalization, Chapter II.

modern industrial world, has had to make large expenditures in starting new industrial undertakings. Furthermore expensive wars with China and Russia compelled her to carry a heavy burden of national debt. This debt amounted in 1914 to $1,273,000,000, including $745,000,000 in foreign loans.[7] With such an economic situation it follows that the production of wealth is one of the foremost problems in the promotion of Japan's well-being.

The increase of national wealth must be derived from individual income and savings. For this purpose it is essential to promote the economic activities of the people. In truth Japan has seen a remarkable development in economic activities in the last fifty years, but it was chiefly on the side of production; handicraft gave way to machine industry; steam and electric power took the place of hand or animal power. Efficiency in production has increased ten to a hundred times. Yet, if we examine the use of wealth, especially the private consumption of wealth, we find that there has been no conspicuous advance. The mode of living in general—housing, food, clothing, and other factors of living—has not made noteworthy improvement. The mass of people live in just the same way as they did during the feudal régime. In the cities some change in the mode of living may be seen among a certain class of people. It is doubtful, however, whether the change could be called a real improvement or simply a mere adaptation of foreign customs. There should be improvements of such a kind that an efficient standard of living could be economically maintained. In a word, economic progress both in theory

[7] Of course the amount of the national debt is not a proper index of national poverty. Before the present war France was considered financially the strongest country in the world, yet in 1914 she carried a greater national debt than that of any other country, a sum amounting to $6,278,000,000. The debt of the British Empire was $3,528,000,000, that of the German Empire was $5,273,000,000, and that of the United States $2,912,000,000. However, the nature of the debts of these great powers is quite different from that of the Japanese debt, which consists chiefly of war loans, and is unproductive. Therefore the rate of interest is high, running from 4 per cent to 5 per cent, while that of the United States is generally 2 per cent to 3 per cent (Statesman's Year Book, 1915).

and in practice must not limp. Unless both production and consumption make parallel advancement, the economic welfare of the individual as well as of the nation can never be expected to improve.

Although it is not likely that this study of the standard of living will be able to furnish many theories of family consumption, it is expected that the work will throw some light on this fundamental question and will make some contribution to economic knowledge. It is hoped, at the same time, that the knowledge of an efficient standard of living will advance the development of the nation at large.

CHAPTER II

Conception of the Standard of Living

It must be remembered that the study of the standard of living constitutes one of the most difficult fields of economic investigation. It is a field of extraordinary complexity and confusion because it depends, first, on individual conditions; second, on social conditions; and third, on territorial conditions. The individual conditions are the most variable, as they are governed by inheritance, character, taste, education, income, and capital. Moreover the facts to be investigated are usually considered by individuals as personal matters, and for this reason investigators have great difficulty in the collection of reliable data. Then, social conditions are constantly changing with the progress of civilization; territorial conditions too are very different according to the various regions under consideration.

Nevertheless the confusion, complexity, inaccuracy, and inequality which result from these different conditions do not change the essential nature of living, which is capable of scientific treatment. The outward conditions for getting a living are almost infinitely variable; but if we proceed by careful investigation, a certain definite standard of living will be discernible through the confused mass of facts. That this standard can be determined is possible for the following reasons:

(1) Every man, as a human being, has a certain common nature, which is entirely unlike that of other species of animals. This common nature consciously or unconsciously produces obvious similarity in his economic activities in spite of wide diversification in his outward manner of living.

(2) Owing to the fact that "man is a social animal," human nature naturally creates many social relations in

society, and a process of social assimilation is all the time at work. With the progress of civilization these social influences act upon man more and more powerfully. Thus the economic activities of human beings after all can be classified under certain social systems or organizations.

(3) Men are imitative of one another by nature. This inclination of human nature is always working physiologically and psychologically. Whether voluntary or involuntary, this imitation results in a great degree of uniformity, which aids the scientific search for the standard of living.

The similarity of human activities, due to these facts, makes possible an approach to the problem of living by scientific investigation. Yet here it is important to pay attention to the selection of an appropriate method in determining the standard of living; otherwise we shall be thrown into hopeless confusion, and the conclusion, obtainable after much toil, will be nothing more than that "every man has his own standard of living."[1] It is evident that the standard of living is a relative problem in which it is almost impossible to secure precision. The only available method of treating this problem is to begin with the study of the origin of all activities of economic life; namely, human wants. Marshall has well said that "the term the standard of life is here taken to mean the standard of activities adjusted to wants."[2] Economic activities, which are nothing but expressions of wants, are greatly complicated and are very variable, but their origin—namely, wants—is comparatively simple and less changeable under certain circumstances.

In order to approach the subject, therefore, it is necessary to make a classification of wants. The most useful one for our purpose is a four-fold division: necessity, decency, comfort, and luxury. Necessity is the feeling of deficiency in those things necessary for bare existence. It consists chiefly in the desire for the food, shelter, and clothing which are physiologically necessary to prevent physical deteriora-

[1] Streightoff, p. 1.
[2] A. Marshall, Principles of Economics, p. 689.

tion. The mode and scale of activities adjusted to these wants will be termed the "absolute standard of living." This is the lowest possible standard of living for human existence. All other standards above this will be termed "the relative standard of living."

The absolute standard of living, if rightly examined, shows an unchangeable character, because the life of primitive people, whose wants do not extend much beyond the necessaries for existence, is relatively homogeneous in its physiological and social relations. The relative standard is, however, much more complicated; it may be divided into three grades according to the activities resulting from wants for decency, comfort, and luxury. However, we cannot distinguish these three kinds of wants with scientific accuracy. The distinction among them can never be so clearly discernible as that which exists between them and necessity. As human effort in civilized society is generally directed toward securing more than necessities for mere existence, the absolute standard of living in the present generation is rather a hypothetical one. It is a standard befitting only primitive tribes such as are in the hunting, fishing, or pastoral stages. Beyond necessities, we must satisfy wants for decency; for example, the wants for certain kinds of clothing, which are necessary for the maintenance of social position, should be satisfied. In other words we must maintain a decent living "in keeping with the dignity of a human being."[3] Although the meaning of the phrase, "dignity of a human being," is ambiguous, it suggests that there must be at least some comfort above necessity, because the sole end of human life is not mere machine-like production. Civilized man has a certain scale of comfort which he considers indispensable to his economic life, and which helps to preserve him in efficiency. This standard of life must include "the number and character of the wants which a man considers more important than marriage and family." Then many people desire more than comfort in their living, and like to indulge in luxury. Some scholars,

[3] J. A. Ryan, Living Wage, p. 72.

such as Leroy-Beaulieu, insist that luxurious expenditure is beneficial and that it is necessary for the advancement of social life.[4] But I can never be an apologist for luxury, and I stand with Laveleye as its opponent.

As has been stated before, the relative standard of living is the standard adjusted to all the wants for necessity, decency, comfort, and luxury in any particular society at any time or in any place. Bullock states that "the amount of comforts or luxuries customarily enjoyed by any class of men forms the standard of living of that class."[5] This standard corresponds to what I call the relative standard of living. But a certain confusion results when we speak of "comforts or luxuries." Will it not be possible to make a distinction between comfort and luxury? Roscher classified wants in three parts; namely, Natur-, Anstands-, und Luxusbedürfnisse[6] (necessity, decency, and luxury). He seems to include comfort in luxury. Certainly all classifications of wants have only a relative meaning, in that they are changeable with individual, social, and territorial conditions. But "luxury, while variously defined, involves always the thought of great consumption of wealth for unessential pleasures."[7] Or, "luxury is to devote a relatively large amount of labor to the satisfaction of a relatively superfluous want."[8] Luxury is altogether unessential, superfluous, and often harmful to economic life. It is harmful because the influences of luxury upon living affect both the individual and society. The effect of luxury on the individual is to discourage the spirit of steadiness and sobriety, to cause lavish expenditures in family budgets, and to undermine the health. Socially the effects of luxury are as follows: It decreases the wealth-producing power of the nation; it brings about higher prices for commodities; it increases the importation of foreign goods; it disturbs the social peace. These effects are certainly injurious to economic

[4] R. T. Ely, Outlines of Economics, p. 181.
[5] C. J. Bullock, Introduction to the Study of Economics, p. 126.
[6] Roscher, B. I., S. 1.
[7] F. A. Fetter, Principles of Economics, p. 385.
[8] C. Gide, Principles of Political Economy, p. 370.

well-being. The activities adjusted to luxury should be excluded from what I shall define as the "efficient standard of living." But comfort is different from luxury. Comfort is always essential and important for efficiency because the satisfaction of the desire for comfort results in producing more efficiency, directly or indirectly. It may be necessary to devote a comparatively great sum of money to the securing of comfort, but the result of the expenditure will prove profitable by giving high vitality and great energy.

Now, if we exclude luxury, we shall have derived a new standard of living from the relative standard and it may be termed the "efficient standard of living." This is defined as the mode and scale of activities adjusted to wants for necessity, decency, and comfort in any particular society at any time or in any place. The purpose of this study, then, will be to discover a standard of living which will correspond to what has been defined as the efficient standard of living. This standard requires as essential elements, food, clothing, housing, lighting and heating, education, society, charity and religion, health, recreation, and saving (insurance). But an absolute standard of living generally requires only food, clothing, and housing. The food expenditure of primitive people is often more than 90 per cent of total expenditure.[9] Thus from the expenditure for food it is possible to deduce the whole status of the absolute standard of living. While other things are required for the efficient standard of living, food, clothing, and housing always constitute the fundamental items. Therefore reliable data concerning these three expenditures form the most important material for the determination of the efficient standard of living.

It is necessary, then, to take into careful consideration the fact that the principal influences which give rise to great variations in living conditions are the following:

Progress of Civilization.—With the progress of civilization human wants increase almost indefinitely both in quantity

[9] A study by the writer of the economic life of the Japanese aborigines, the Ainu, shows the food expenditure of the people to be 85 per cent to 95 per cent.

and in quality. Therefore with different civilizations there will be different standards of living. "The standard of living is fixed by the advancement of civilization."[10]

Influence of Physical Agents.—Man adjusts his life to his natural environment. Climate, food, soil, and the general aspect of nature are four physical agents which have a great influence on his mode of living.[11]

Influence of Occupation.—The influence of occupation is most powerful in a country like India, where the caste system and the old feudal customs are still influential. In Japan, the class distinctions between warriors, farmers, industrialists, and merchants were very great in feudal times, and their standards of living differed according to their occupations. Even at present this class distinction is prevalent among certain classes of the people; for example, day laborers, domestic servants, merchants, bankers, doctors, government officers, professors, and students maintain such different standards that their outward appearances are good indices of their occupations.

Influence of Individuality.—The income, capital, health, disposition, knowledge, morality, and religion of an individual affect his mode of living. In this capitalistic age the strongest influence upon the economic life comes from income and capital. With the progress of economic society the influence of territorial and occupational conditions will be gradually weakened. On the other hand the influence of income and capital is getting more and more powerful. The standard of living, therefore, can be generally ascertained by the amount of wealth possessed by the individual.

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[10] S. Nearing, Reducing the Cost of Living, p. 35.
[11] H. T. Buckle, History of Civilization, vol. i, chap. 2.

PART II

COST OF FOOD

CHAPTER III

General Study of Diets[1]

The human wants for food are the most fundamental and the strongest motives for getting a living. Especially with primitive people, they are so strong that the sole purpose of living is to get food enough for the maintenance of life. Their food expenditure is often as high as ninety per cent of their total income.[2] In modern society, even among civilized people, the food expenditure in the family budget is the largest fundamental item, generally running from 30 to 65 per cent for the middle and poor classes. In the study of the standard of living, therefore, the following questions should be solved at the outset: What kind and what amount of food is required for our living? What will be its cost? In order to get a satisfactory statement, it is necessary to use the results of bio-chemical studies on human nutrition. Beginning with the importance of food, we find that food serves to form the material of the human body and repairs its waste; and it serves as fuel for the generation of

[1] Reference books used for the general study of diet are:
W. O. Atwater, Methods and Results of Investigation on the Chemistry and Economy of Food. Bulletin No. 21, U. S. Department of Agriculture, 1895.
W. O. Atwater, Principles of Nutrition and Nutritive Value of Food. Farmers' Bulletin No. 142, U. S. Department of Agriculture, 1902.
R. H. Chittenden, Physiological Economy in Nutrition. 1904.
R. H. Chittenden, The Nutrition of Man. 1907.
W. H. Jordan, Principles of Human Nutrition.
Von H. Lichtenfelt, Ueber die Ernährung und deren Kosten bei deutschen Arbeitern.
E. H. Richards, Cost of Food, 1901.

[2] Page 18, note 9.

energy for the work man has to do. The constituents of food which are able to accomplish these functions are technically called nutrients, and they are summarized in three essential forms as follows: protein, which forms tissue and serves as fuel; fats, which form fatty tissue and serve as fuel; carbohydrates, which are transformed into fat and serve as fuel.

The amount of nutrients needed per capita per diem differs according to different authorities. For the present study, it will be well to follow the standards of dietaries given by the most commonly recognized authorities, such as Voit, Atwater, Playfair, and some others.[3] On the whole, these chemists do not show much difference in their opinions, but the well-known scholar, Professor Chittenden of Yale University, and his followers advocate much greater moderation in eating. Professor Chittenden claims that "one-half of the 118 grams of proteid food called for daily by the ordinary dietary standards is quite sufficient to meet all the real physiological needs of the body, certainly under ordinary conditions of life."[4] However, students of human nutrition do not agree that so radical a diminution of protein in the food is desirable.[5]

Now, according to the result of Voit's observation, the

[3] STANDARDS OF DAILY DIETARIES

(Jordan, pp. 182–183)

	Protein (Grams)	Fats (Grams)	Carbohydrates (Grams)	Total (Grams)	Potential Energy (Calories)
Man at moderate work (Voit)	118	56	500	674	3055
Man at hard work (Voit)	145	100	450	695	3370
Man at moderate work (Moleschott)	130	40	550	720	3160
Man with light muscular work (Atwater)	112	—	—	—	3000
Man with moderate muscular work (Atwater)	125	—	—	—	3500
Man with hard muscular work (Atwater)	150	—	—	—	4500
Adult in full health (Playfair)	119	51	531	701	3140
Active laborers (Playfair)	156	71	568	795	3630
Hard working laborers (Playfair)	185	71	568	824	3750

[4] Chittenden, Physiological Economy in Nutrition, p. 475.

[5] Jordan, pp. 190–192.

amount of nutrient needed for Europeans at moderate work is protein 118 grams, fats 56 grams, and carbohydrates 500 grams. For the amount of nutrient required for Japanese at moderate work it is necessary, first of all, to make a modification because of the difference in body weight between Europeans and Japanese. While the average body weight of Europeans in Voit's experiment is 63.9 kilograms, that of the average Japanese is only 52 kilograms.[6] The difference in these weights gives the ratio of 1 : .8, and the amount of nutrients required by the average Japanese is calculated as about 80 per cent of that necessary for Europeans; namely, protein, 96 grams; fats, 45 grams; carbohydrates, 406 grams. Besides the difference in body weight, food requirements must of necessity vary with dietary habit. For more than two thousand years Japanese diet, generally speaking, consisted chiefly of cereals and vegetables, with some fish and a little poultry. Only the outcast class of people were in the habit of eating meat. It is only during the last fifty years that the Japanese have begun to use meat. A distinctive feature of the food requirement of the Japanese as compared with that of Europeans and Americans is that the former require more carbohydrates and less fats. Taking these facts into consideration, the Bureau of Hygiene of the Japanese Government has arranged the daily dietary for Japanese at moderate work as follows: protein, 96 grams; fats, 20 grams; carbohydrates, 450 grams. It is evident through the study of Voit that about one third of the total amount of protein should be obtained from animal food. Though vegetable protein is much cheaper in price, it is more difficult both to digest and to absorb than animal protein.

From the daily dietaries of nutrients, standard diets have been suggested by many investigators. A great many combinations of standard diets are devised by chemists

[6] Department of Interior Affairs: Articles of Food. The report of the nutrition investigation by Underhill (Chapin, p. 320) states that "a man of 70 kilos body-weight at moderate muscular work needs 125 grams protein."

and students of domestic science. The following are some Japanese diets which are suggested by the Bureau of Hygiene:[7]

(1)

Rice	752 grams (4 *go*)[8]
Beef	225 "
Cucumber or Melon	56 "
White potatoes	75 "
Japanese onions (*Negi*)	75 "
Miso	19 "
Milk	0.318 pint (1 *go*)

The amount of nutrients contained:

Protein	95.7 grams
Fats	28.0 "
Carbohydrates	454.3 "

(2)

Rice	752 grams (4 *go*)
Fish	244 "
Vegetables (fresh)	301 "
Miso	19 "
Eggs	2

The amount of nutrients contained:

Protein	101.0 grams
Fats	19.2 "
Carbohydrates	446.6 "

(3)

Rice	752 grams (4 *go*)
Chicken	113 "
Miso	38 "
Fish	94 "
Tofu	94 "
String beans	56 "
Uba or *Yakifu*	11 "
Gomanoyu	4 "

The amount of nutrients contained:

Protein	101.5 grams
Fats	19.4 "
Carbohydrates	434.7 "

After the standard diets are settled, the next step in our inquiry is to ascertain the cost of the standard diet. It is hard to determine the average cost because the price of

[7] Department of Interior Affairs: Articles of Food.
[8] For explanations of the Japanese words, see the glossary.

food differs according to time, place, and method of purchase. But, using the average retail price quoted in Tokyo in April, 1915, the cost of the standard diets would be as shown in the following table:

(1)	Quantity	Cost (*sen*)	Unit	Price in Tokyo (*sen*)
Rice	752 grams	8.0	1 lb.	4.0
Beef (a)	225 "	30.0	"	50.0
Cucumber—Melon	56 "	0.5	"	3.5
Potatoes	75 "	0.3	"	1.2
Onions	75 "	1.4	"	7.0
Miso	19 "	0.2	"	4.0
Milk	0.318 pint	4.0	1 pt.	12.6
Total		44.4		
(2)				
Rice	752 grams	8.0	1 lb.	4.0
Fish (b)	244 "	16.0	"	24.6
Vegetables (fresh) (c)	301 "	2.8	"	3.5
Miso	19 "	0.2	"	4.0
Eggs	2	6.0	1 pt.	3.0
Total		33.0		
(3)				
Rice	752 grams	8.0	1 lb.	4.0
Chicken (d)	113 "	15.0	"	50.0
Miso	38 "	0.4	"	4.0
Fish	94 "	6.0	"	24.6
Tofu	94 "	0.5	"	2.0
Beans	56 "	1.0	"	0.7
Uba, Yakifu	11 "	1.1	"	38.0
Gomanoyu	4 "	0.1	1 pt.	24.0
Total		32.1		

(a) Without bone.
(b) Average of 10 kinds of fish.
(c) Average of 18 kinds of vegetables.
(d) Without bone and other refuse.

The first diet is the most expensive and costs 44.4 *sen*. The selection of food material given in the first illustration is extravagant, because beef is an exceptionally expensive food article in Japan at present. As 225 grams cost 30 *sen*, other kinds of meat or fish may be more economically substituted, greatly reducing the cost of the diet. For the average, therefore, this illustration ought to be excluded.

The second diet costs 33 *sen*, and the third 32.1 *sen*, and the average cost of these two per capita per diem is 32.6 *sen*. This is simply the cost of food material, and does

not include the cost of condiment and auxiliary food, about 4 *sen* in the soldier's diet.[9] The total cost of the diet is then 36.6 *sen*. As will be shown in Chapter VII, this diet costs too much, and is by no means the ideal diet in the economic sense. Moreover conditions in Japan have greatly changed since the Bureau of Hygiene worked out the standard diet, and at the present time a cheaper and better diet containing the same amount of nutrient can be obtained, and consequently the cost of the standard diet may easily be cut down to 30 *sen*.[10]

In order to better understand the problem of Japanese diet, a comparison between the American standard diet and that of Japan may be interesting and helpful. The following illustration of an American diet is given by Professor Underhill of Yale University.[11]

Kind of Food	Weight and Fuel Value per Man per Day					
	Food Materials (Grams)	Protein (Grams)	Fat (Grams)	Carbohydrate (Grams)	Fuel Value (Calories)	Cost
Beef, veal, mutton	158	32	16	.....	221	.....
Pork, ham, bacon, etc.	20	3	10	.....	108	.....
Poultry	20	3	2	.....	34	.....
Fish, etc.	20	1	.....	.....	8	.....
Eggs	64	8	6	.....	90	.....
Butter, lard	20	.....	17	.....	158	.....
Cheese	.....	.....	.....	.....	.....	.....
Milk	313	12	14	11	272	.....
Total Animal Food	615	59	65	11	891	$0.11
Bread, cake, etc.	337	30	7	185	940	.....
Flour, cereals	60	8	3	41	232	.....
Vegetables	180	5	.....	26	134	.....
Fruits	20	.....	.....	2	10	.....
Tea, coffee, etc.	.....	.....	.....	.....	.....	.....
Sugar, molasses	74	.....	.....	72	297	.....
Liquors	.....	.....	.....	.....	.....	.....
Total Vegetable Food	671	43	10	326	1613	$0.10
Total Food	1286	102	75	337	2504	$0.21

[9] See page 36.
[10] See page 39.
[11] Chapin, p. 323.

The total cost of this American standard diet is 21 cents, but it is based on the prices prevailing in the summer of 1907. Prices have advanced since that time, and the cost may be estimated as 28 cents in the summer of 1913.[12] Now, while the cost of the standard diet is 18.3 cents in Tokyo, it is 28 cents in the United States. The causes of this difference will be discussed in part in Chapter VII; generally speaking, however, the following are the three main causes:

(1) The price of food in Japan, excepting that of a few kinds, is much lower than in America. Milk, beef, butter, sugar, chicken, and a few other articles are slightly dearer in Japan, but the majority of food articles are much cheaper. For instance, rice costs about one quarter, fish about one third, eggs one half, pork one half, potatoes about one fourth, and cabbages about one fourth of what must be paid in America.

(2) The Japanese requirement in food is theoretically about 80 per cent of the American.

(3) The dietary habit of the Japanese requires more vegetable and less animal food, the former being very much cheaper than the latter.

The relatively smaller cost of Japanese diet as a whole has been one of the fundamental factors in the industrial progress of modern Japan. It makes possible a low standard of wages, which, provided it is not less than the minimum wage required by the Japanese standard, will prove a valuable factor in future economic development in the world economy. Therefore, reducing the cost of the standard diet is a much more important matter than it is generally thought to be. For this reason we must maintain the habit of selecting a diet which has the highest food value in both a nutritive and an economic sense. The principles for the determination of the food value may be enumerated as follows:

[12] The index number of retail prices of fifteen principal articles of food in the United States was 128.0 in 1907, and 171.6 in an average of July, August, and September, 1913 (U. S. Bureau of Labor Statistics: Retail Prices).

Amount of Nutrients.—Three forms of nutrients should be contained in food. Speaking economically as well as physiologically, the most important form of the three is protein, because protein is the most expensive nutrient in price and its function is more essential than that of the other two. Thus, for the determination of food value the amount of protein contained in food is the controlling factor.

Amount of Heat Generation.—This is chemically expressed by number of calories. While one gram of either protein or carbohydrate produces 4.1 calories, fat generates as much as 9.3. In view of heat generation, therefore, fat is most important.

Absorption and Digestibility.—The nutrients must be easily digested and absorbed. For this reason especially, though vegetable protein is much cheaper in price than animal protein, the former is as a nutrient inferior to the latter. This is due to the fact that it is less digestible and will not absorb easily.

Market Value of Food.—The three foregoing factors constitute the nutritive value of food. For the purpose of economic discussion, the market value of food plays an important role in the determination of food value as a whole. For example, horse meat is much cheaper than beef in spite of the fact that the former though less digestible contains more protein. Hence the use of horse meat, which prevails in Germany and also to some extent among poor people in Japan, should be economically justified.

For the study of food expenditure in the family budget, the members of the family should be reduced to a unit, since the amount of food necessary for an individual varies according to his age and sex. For this purpose, equivalents are used which take as a unit the food requirements of an adult man. The factors are "based in part upon experimental data and in part upon arbitrary assumptions," and the figures are somewhat different according to different

authorities. In this study the following scale of equivalents which has been adopted in the United States is used:[13]

An adult man	1.0[14]
A boy of 15 to 16	.9
An adult woman	.8
A girl of 15 to 16	.8
A boy of 13 to 14	.8
A girl of 13 to 14	.7
A boy of 12	.7
A boy of 10 to 11	.6
A girl of 10 to 12	.6
A child of 6 to 9	.5
A child of 2 to 5	.4
A child under 2	.3

In Japan what is considered a normal family consists of father, mother, and three children under 15. If the children are two girls of 12 and 3 and a boy of 7, the family requirement will be 3.3 units.

Calculated on the per capita per diem cost of food, that is, 32.6 *sen*, a normal family's expenditure for food would be 1.08 *yen* per day and 394.20 *yen* per year.

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[13] See U. S. Department of Agriculture, Farmers' Bulletin, No. 142, p. 33.

[14] In Germany the Bureau of Statistics adopts a much simpler scale which makes no distinction between the sex of children under 15. The scale of equivalents for the requirement of food adopted by the German government is as follows:

A man (over 15)	1.0
A woman (over 15)	0.8
A child of 13–15	0.5
A child of 10–13	0.4
A child of 7–10	0.3
A child of 4–7	0.2
A child under 4	0.1

CHAPTER IV

Actual Status of Food Consumption

In the preceding chapter there have been set forth some examples of daily diet which are considered almost authoritative standards of food consumption in modern Japan. They are standards which are theoretically ideal as the result of biochemical investigation, but they are not the diet of the average Japanese family.

In order to get concise knowledge of the subject, it is necessary to study it from several different points of view. It will here be considered according to two different methods. The first method is the actual study of food consumption, through (1) the small farmer's diet. This will show the actual standard of food consumption among the lowest class in rural Japan. (2) (a) prisoner's diet, and (b) diet of a family supported by a woman day-laborer living in poverty. These two studies will show the standards of food consumption for the maintenance of the lowest possible standard of living. (3) (a) sailor's and soldier's diet, and (b) diet of a middle-class family. These two studies will show the minimum necessary standards of diet for the maintenance of the efficient standard of living. The standard diet of the middle class is a term which will cover both studies.

The second method is the statistical study of food consumption in Japan as a whole, which may be called the standard of national food consumption. This subject will be treated in the following chapter.

(1) *Small Farmer's Diet.*—The method of inquiry was primarily by the examination of the food consumption of the families selected as representative in the different localities. Five different "college farms" situated in different sections of the Northern Island of Japan were selected. These may not be exactly representative of the Japanese farming

DIET OF SMALL FARMERS

(per man per day)

	Farm Section IV		Farm Section V		Farm Section VI		Farm Section VIII		Average Quantity
	Quantity	Cost (*sen*)	Quantity	Cost (*sen*)	Quantity	Cost (*sen*)	Quantity	Cost (*sen*)	
Rice	1.7 *go*	3.7	2.5 *go*	5.5	2.5 *go*	5.3	1.1 *go*	2.2	1.95 *go*
Barley (naked)	3.0 *go*	2.6	3.6 *go*	3.3	3.5 *go*	3.4	3.7 *go*	4.0	3.45 *go*
Miso	17 *momme*	0.6	5 *momme*	0.2	46 *momme*	1.4	18 *momme*	0.7	21 *momme*
Shoyu	0	0	0	0	0.006 *go*	0.02	0.02 *go*	0.09	0.006 *go*
Fish[1]	.....	0.6	.....	0.8	.....	1.3	.....	1.2	.....
Vegetables	.....	3.0	.....	3.3	.....	0.9	.....	1.7	.....
Pickles	.....	0.6	.....	0.6	.....	0.4	.....	0.8	.....
Saké	0	0	0	0	0	0	.....	0.3	.....
Sugar	0	0	0	0	0	0	.....	0.06	.....
Total	.....	11.1	.....	13.7	.....	12.7	.....	11.0	.....

[1] Fish is dried or salted and generally used for seasoning purposes.

districts, but, on account of the great simplicity in the way of living among small farmers as a whole, the data concerning the food consumption of the selected families may be considered not very far from the average standard of the class.[2] The results of the investigation are summarized in the tables on pages 30 and 31.

AVERAGE COST OF SMALL FARMER'S DIET

(per man per day)

	Local[3]		Tokyo[4]	
	Cost (*Sen*)	Per Cent of Total Cost	Cost (*Sen*)	Per Cent of Total Cost
Principal Food:				
Rice	4.2	34.7	3.90	27.3
Barley (naked)	3.3	27.2	4.66	32.6
Total	7.5	61.9	8.56	59.9
Subordinate Food:				
Animal food	1.0	8.2	1.25	8.7
Miso	0.7	5.8	0.84	5.9
Shoyu	0.03	0.2	0.02	0.1
Vegetable	2.2	18.2	2.75	19.2
Pickle	0.6	4.9	0.75	5.3
Saké	0.08	0.6	0.10	0.7
Sugar	0.02	0.2	0.03	0.2
Total Subordinate Food	4.63	38.1	5.74	40.1
Grand Total	12.13	100	14.30	100

The conspicuous facts relating to the small farmer's diet are as follows:

(i) The diet consists chiefly of the principal food; that is, rice and naked barley. The expenditure for the principal food is about 60 per cent of the total food expenditure.

(ii) Although rice constitutes only the most essential principal food for the urban population, barley is equally important for the rural population. In this study, 64 per cent of the principal food (in quantity) was found to consist of barley.

[2] The method of investigation is described in Chapter XIV, page 127.
[3] Local retail prices in October, 1913.
[4] Retail prices in Tokyo, April, 1915.

(iii) No meat is consumed at all. In some other farming districts, however, a little meat or poultry is used, but to such a small extent that it should not be counted as an independent item of food consumption.

(iv) Animal protein is obtained exclusively from fish, which is generally dried or salted, and is ordinarily used for cooking or seasoning purposes. The price of fish is much higher than that of vegetables or grains, especially in rural districts. In cost, therefore, it reaches 8.2 per cent in spite of the small quantity used.

(v) Fresh vegetables, pickles, and *miso* are the main articles of subordinate food. Since the prices of these are very low in country districts, they are consumed in great quantities.

(vi) Sugar is used very sparingly. It is not used for cooking purposes, but is generally eaten by children as a substitute for sweets.

(vii) Food is seasoned chiefly with *miso* and *shoyu*, which contain salt and vegetable protein.

(viii) The total cost of food is only 12.1 *sen*, which is about one third of the cost of the standard diet. But the same diet would cost 14.3 *sen* if it were purchased in Tokyo.

Although this study covers only a part of the vast field of the agricultural population, which constitutes more than one half of the total population of Japan, the facts enumerated above may be taken as characteristic of small farmers of Japan at large. To sum up, they are the underfed vegetarians; however, the cheapness of vegetable food in rural districts enables the farmer to obtain a large quantity of this food for a small amount of money. In cities the cost of living is higher, since the people there like to use high-priced animal food, and are also obliged to pay more for vegetable food. For this reason the rural population are not so much underfed as the extremely low cost of their living would seem to indicate.

(2) In order to study the actual standards of food consumption for the maintenance of the lowest possible standard of living, the dietaries of prisoners and of a family

living in the most extreme poverty were investigated. (a) For the prisoner's diet, three local prisons were visited in 1914; namely, Tokachi prison, Abashiri prison, and Sapporo prison. The data which are summarized in the following table were received in official letters dated as follows: Tokachi prison, February 10, 1915; Abashiri prison, February 13, 1915; Sapporo prison, February 5, 1915. These letters gave the average of the entire food consumption of all the prisoners in each prison during one year from April 1, 1913, to March 31, 1914. The quantity of principal food and the cost for subordinate food are stated by the prison law, with some allowance according to the different conditions in the different localities.

PRISONER'S DIET IN THREE DISTRICT PRISONS (1913–1914)

(per man per day)

	Tokachi Prison[5]		Abashiri Prison[6]		Sapporo Prison[7]		Average			
	Quantity (*go*)	Local Cost (*sen*)	Quantity (*go*)	Local Cost (*sen*)	Quantity (*go*)	Local Cost (*sen*)	Quantity (*go*)	Local Cost[8]	Tokyo Cost[9] (*sen*)	Percentage of Total Tokyo Cost
Rice[10]	2.648	6.42	2.025	8.37	2.310	3.54	2.328	7.13	3.73	35.9
Barley (cracked)	2.648		2.700		2.744	3.06	2.697		3.64[11]	35.1
Other cereals	1.324		2.025		0.686		1.345		1.61[12]	15.5
Total Principal Food	6.620	6.42	6.750	8.37	5.74	6.60	6.37	7.13	8.98	86.5
Total Subordinate Food	.....	0.99	.....	1.18	.....	1.20	.....	1.12	1.40	13.5
Total	.....	7.41	.....	9.55	.....	7.80	.....	8.25	10.38	100

The striking features of the prisoner's diet are as follows:

[5] Data given by the Tokachi Prison, February 10, 1915.
[6] Data given by the Abashiri Prison, February 13, 1915.
[7] Data given by the Sapporo Prison, February 5, 1915.
[8] Local prices are the average of the year 1913.
[9] Tokyo prices are the average of April, 1915.
[10] Foreign rice at 16 *sen* per *sho* (Tokyo).
[11] Price 13.5 *sen* per *sho* (Tokyo).
[12] Price 12 *sen* per *sho* (Tokyo).

(i) The dietary of prisoners is extremely simple. The diet consists almost wholly of the principal food; that is, cereals only. In price the principal food amounts to 86 per cent and the subordinate food to 14 per cent. This ratio is characteristic of prisoners' diets in all civilized countries. In England the cost of the principal food calculated in terms of the Tokyo price is about 73 per cent of the total food cost, or about 11 *sen*.[13]

(ii) Sixty-three per cent of cereals other than rice are used, the use of the latter amounting to 37 per cent. There is not much difference in nutritive value between rice and other cereals. Because of the palatable quality of rice, however, it brings a higher price than do other cereals.

(iii) The prisoners are no doubt underfed, but the low cost reported by the superintendent of prisons is not a correct index to the nature of the food. Supplies are bought at wholesale prices, and moreover the wages of prisoners who engage in the production of vegetables are excluded from the price of the produce. The same diet, therefore, would cost 10.38 *sen* in Tokyo.

(b) With the purpose of making an intensive study of the cost of living on the lowest possible standard, a family was selected in the poorest section of the working class community in the city of Sapporo (population about 100,000). The family consisted of a mother and two daughters of 8 and 4 years. The family was equivalent, therefore, to 1.7 units. The woman is a day-laborer who was earning an average of 25 *sen* a day during the period of investigation. She received regularly the gift of two *yen* every month for her house rent. Moreover she was paid one *yen*, besides receiving gifts of clothes and food, in compensation for the work of reporting daily for a month the details of her household accounts. The food consumption of the family is summarized in the following table. The investigation was carried out in 1914, and the Sapporo cost of food is calculated at the retail prices which were actually paid. The Tokyo prices are the retail prices in April, 1915.

[13] For the dietary of prisoners in English prisons, see A. Cook, Our Prison System, p. 296.

DIET OF THE FAMILY OF A WOMAN LABORER

	Per Family per Month		Per Man per Day[14]			
			Quantity	Cost		
	Quantity (*go*)	Cost Sapporo (*yen*)	(*go*)	Sapporo (*yen*)	Tokyo (*sen*)	Percentage of Total Sapporo Cost
Fish	.....	0.100	.....	0.2	0.3	1.8
Fish (rejected part)	.....	.150	.....	0.3	0.3	2.7
Total Animal Food	.....	.250	.....	0.5	0.6	4.5
Rice	283.0	4.667	5.6	9.2	10.0	83.6
Buckwheat flour	.....	.070	.....	0.1	0.1	1.0
Umeboshi	.....	.050	.....	0.1	0.1	1.0
Miso	.....	.450	.....	0.9	1.1	8.2
Tsukemono	.....	.100	.....	0.2	0.2	1.8
Total Plant Food	.....	5.537	.....	10.5	11.5	95.6
Grand Total	.....	5.787	.....	11.0	12.1	100.

The striking features of this diet are as follows:

(i) Rice is exclusively used for the principal food. On the whole this is one of the characteristics of the diet of the urban population as compared with that of the rural population.

(ii) Eighty-four per cent of the total cost is devoted to the main food.

(iii) *Miso* is the most important subordinate food, just as it is for the country people. Fifty-three per cent of the amount devoted to subordinate food is spent for it.

(iv) There is more variety in food as compared with the small farmer's diet, but the total quantity of food is not so great as the farmer's.

(v) The diet is not vegetarian, as is that of the small farmer; 30 per cent of the subordinate food is fish.

(3) With the purpose of studying the minimum necessary standards of diet for maintenance of the efficient standard of living, two sets of dietaries were investigated: (a) sailor's and soldier's diet, and (b) the standard diet for the maintenance of the efficient standard of life.

(a) *Sailor's and Soldier's Diet.*—The Department of the

[14] Equivalent to 1.7 adult males; number of days in a month, thirty.

Navy and the Department of the Army of the Imperial Government of Japan carry on from time to time investigations of soldiers' and sailors' diets. The following tables are summarized from the data furnished by the above named departments. It should be noted that the prices given by the departments do not have much practical value in our present study, as they are calculated on prices for wholesale amounts. Therefore the writer's own figures, calculated according to the retail prices quoted in Tokyo in April, 1915, are substituted in the tables. The quantity

SAILOR'S DIET (IN HARBOR)[15]
(per man per day)

	Quantity (Gram)	Cost[16]	
		Amount (*sen*)	Percentage of Total
Beef, pork, etc. (preserved)	.....	.....	.....
Fish (preserved)	.....	.....	.....
Beef, pork, etc. (fresh, second grade with bone)	226	13.62	34.7
Fish (fresh)	154	8.00	20.3
Total Animal Food	380	21.62	55.0
Bread (hard)	.....	.....	.....
Bread (ordinary)	244	5.2	13.2
Rice (cleaned, second grade)	376	3.6	9.2
Barley (cracked)	128	1.12	2.8
Beans, peas	11	0.14	0.4
Flour	8	0.08	0.2
Vegetables (dried)	.....	.....	.....
Vegetables (fresh)	451	3.6	9.2
Total Plant Food	1218	13.74	35.0
Tea	2	0.2	0.5
Roast barley	4	0.3	0.8
Sugar	38	1.14	2.9
Shoyu	0.4 *go*	1.2	3.0
Vinegar	.03 *go*	0.07	0.2
Vegetable oil	.01 *go*	0.01	0.1
Salt	1	0.02	
Butter	4	1.0	2.5
Total Auxiliary Food	.....	3.94	10.0
Grand Total	.....	39.30	100

[15] Data, except cost, furnished by the Department of the Navy, April 24, 1913.

[16] The cost is calculated by retail prices in Tokyo in April, 1915.

is the average of the entire food consumption by all the soldiers and sailors (officers excluded) in the navy and the army during one year from April 1, 1913, to March 31, 1914.

SOLDIER'S DIET—ARMY[17]

(per man per day)

	Quantity	Cost[18]	
	(Gram)	Amount (*sen*)	Percentage of Total
Beef (without bone, second grade)	27	2.90	8.4
Pork (without bone, second grade)	10	0.69	2.0
Chicken	2	0.22	0.6
Eggs	4	0.27	0.8
Fish (fresh)	66	3.56	10.4
Fish (dried)	10	4.80	14.0
Fish (salted)	10	4.62	13.4
Total Animal Food	129	17.06	49.6
Rice (cleaned, second grade)	4.2 *go*	7.56	22.0
Barley (cleaned)	1.8 *go*	2.43	7.1
Vegetables (fresh, second grade)	440	3.51	10.2
Vegetables (dried, average of four kinds)	55	1.71	5.0
Pickles	94	0.39	1.1
Shoyu	.348 *go*	1.04	3.0
Miso	1.718 *go*	0.69	2.0
Total Plant Food	.....	17.33	50.4
Grand Total	.....	34.39	100

The leading features of these diets are as follows:

(i) The standard diets are chemically arranged to contain necessary nutrients. The cost is 39.3 *sen* (navy) and 34.4 *sen* (army).

(ii) A sufficiency of meat as well as fish is used. The percentage of the animal food used is 55 per cent in the navy and 49.6 per cent in the army.

(iii) Less principal food and more subordinate food is used. In the navy only 25.2 per cent and in the army only 29.1 per cent of the total diet is devoted to the principal food.

[17] Data furnished by the Department of the Army, June 30, 1913. They are the average of 18 *shidan* (legions) located on the main island of Japan.

[18] The cost is calculated by retail prices in Tokyo in April, 1915.

(iv) In the navy, one meal a day (generally breakfast) is prepared in the European way, bread and butter instead of rice and *miso* being used.

(v) The comparatively high cost of the navy diet is due to the fact that too much of the expensive meat is used, while in the army more fish and less meat are utilized.

(vi) The army diet is typically Japanese and is quite different from the European.[19]

(vii) As a whole, the diet is wholesome, but the selection of food-stuffs is not economical.

(b) *The Standard Diet for the Maintenance of Efficient Life* (*Improved Standard Diet*).—With the purpose of suggesting a standard diet which can be approved from both practical and theoretical standpoints, a great number of the menus which are mentioned in the following books were used in practical experiments: W. H. Jordan, Principle of Human Nutrition, pp. 232–235; R. Hutchison, Food and the Principles of Dietetics; R. H. Chittenden, Physiological Economy in Nutrition, pp. 366–374; R. C. Chapin, Standard of Living in New York City, p. 323; B. S. Rowntree, Poverty, pp. 99–101; L. B. More, Wage Earners' Budgets, pp. 211–227; several Japanese books on home economics.

The following table shows as the result of the experiments a sample of a standard dietary which is best suited for the modern urban population of Japan. The aim of the diet is, first, to utilize the best in both Japanese and foreign foods and in methods of cookery; and, second, to apply the principles of the improvement of food consumption which will be discussed in Chapter VII. As it now stands the total cost of food per man per day is 30.5 *sen*. The standard diet suggested by the Bureau of Hygiene is not only equal in nutritive value to this improved standard diet, but costs considerably less.

[19] For the diet of German soldiers, see Bischoff, Hoffman und Schwieing, Lehrbuch der Militarhygiene, 1 Band, pp. 391–397.

IMPROVED STANDARD DIET

(per man per day)

Food	Quantity (Gram)	Cost		Protein (Gram)	Fat (Gram)	Carbohydrate (Gram)
		Sapporo (*sen*)	Tokyo (*sen*)			
Breakfast:						
Rice	238.0	3.0	3.0	16.67	0.95	180.00
Miso	31.8	0.2	0.2	4.15	1.90	4.84
Katsubushi	3.9	0.5	0.5	2.95	0.20	0
Tofu	130.0	0.7	0.7	1.37	3.37	8.52
Pickles	39.4	0.1	0.1	0.52	0.01	2.41
Total	443.1	4.5	4.5	25.66	6.43	195.77
Lunch:						
Bread	150.0	3.2	3.2	9.34	0.23	90.38
Butter	7.4	1.6	2.0	0.05	6.38	0
Peas, beans	50.0	0.3	0.5	11.84	0.28	25.51
Milk	100.0	1.5	2.0	3.17	3.99	5.18
Total	307.4	6.6	7.7	24.40	10.88	101.07
Dinner:						
Beef—pork	80.0	6.3	8.6	14.38	17.02	0
Fish	80.0	2.5	2.8	21.93	0.77	0
Butter	5.6	1.2	1.5	0.04	4.80	0
Milk	100.0	1.5	2.0	3.17	3.99	5.18
Animal food	265.6	11.5	14.9	39.52	26.55	5.18
Bread	100.0	2.1	2.1	6.23	0.15	46.89
Potatoes	200.0	0.6	0.8	2.98	0.20	38.44
Udon (Japanese macaroni)	17.0	0.4	0.3	2.02	0.09	10.86
Turnips, radish	40.0	0.2	0.2	0.66	0.03	0.93
Plant food	357.0	3.3	3.4	11.89	0.47	97.12
Total	622.6	14.8	18.3	51.41	27.02	102.30
Grand Total	1373.1	25.9	30.5	101.47	44.33	399.14

CHAPTER V

National Diet of Japan

By the term "national diet" is meant the average diet of a nation. This average is obtained by dividing the total amount of food destined for the consumption of the nation by the number of the total population reduced to the equivalent number of adult population. Hitherto the study of food consumption has generally been based upon the data of some individuals or groups of limited numbers. One should remember, however, that food consumption is a matter which differs according to different individuals, localities, climates, customs, and manners. Such being the case, the intensive method of investigation based upon the data of limited numbers often results in an erroneous conclusion for the actual status of the national diet as a whole.

In this study an entirely different method of investigation, the extensive method, is used. The first step in this process is to find out the amount of total food produce in Japan; the next, to subtract all exports and add all imports of food; and the third, to divide by the number of the total population reduced to the equivalent of the adult man. The reduction of the population may be accomplished by applying the scale of equivalents given in the previous chapter.[1] However, this calculation involves the expenditure of so much labor with so little practical advantage resulting that its use is scarcely worth while. For the sake of convenience, therefore, the following simplified scale is adopted for this study:

A man or woman over 15	1.0
A child of 10–15	0.8
A child of 5–10	0.6
A child under 5	0.4

[1] See page 28.

By the use of these equivalents the equivalent number of persons at each age is determined as follows:

Age Groups	Population[2]	Unit	Adult Equivalent Number
Over 15	34,853,811	1.0	34,853,811
10–15	5,399,314	0.8	4,319,451
5–10	6,061,532	0.6	3,636,919
Under 5	6,670,864	0.4	2,668,346
Total	52,985,511		45,478,527

In the consumption of food the Japanese population of 53,000,000 is equivalent to 45,480,000 adults. In dividing the total amount of the yearly produce of food by the adult population, the quotient is the amount of the national diet per capita per annum. The national diet obtained in such a way necessarily cannot be very exact; but the results are very suggestive and valuable for the study of the national food problem at large, provided we consider them in coordination with individual or group studies.

Consumption of Rice and Other Grains.—The most important grain in Japan is rice. The first use of rice is for the principal food. Generally speaking, the main food in Japan is exclusively composed of rice. Plain boiled rice without milk or sugar is consumed in large quantity at every meal. The second use is for the brewing of the national strong drink, *saké*. The third use is for manifold purposes, such as the making of confectionery, starch, *ame*, and barm (*kooji*). Also seed for the next year's crop is stored away. This third use, however, is minor as compared with the first two uses.

The total produce of the rice crop in 1912 was 245,634,295 bushels.[3] The surplus of the import over the export in the same year was 10,179,695 bushels. The total net consumption in 1913, then, amounted to 255,813,990 bushels. Now, the amount of rice consumed as a main food may be

[2] The census was taken in 1908.

[3] Ordinarily the yearly rice crop is consumed during the next year of production. So the produce in 1912 is used for this study of consumption in 1913.

determined by subtracting from the total consumption the rice used for brewing purposes. Obtaining an average from the sum total used for liquor during the years 1909–1913, the result is 13,950,000 bushels per year. After subtraction, 241,863,990 bushels remain. This remainder divided by the number of the adult population shows the consumption of rice as a main food to be 5.32 bushels per annum, or .117 gallon or 2.9 *go* per diem.

The general belief that the Japanese principal food consists entirely of rice is true of the urban population only. The rural population as a whole use naked barley in great quantities for their principal food. It is mixed with rice in boiling. The poorer the farmer, the greater the proportion of other grains than rice used. The produce of naked barley is 39,500,000 bushels and the consumption of the same per man is 0.87 bushel per year, or .019 gallon (0.5 *go*) per diem. Other grains than naked barley are used to a greater or less extent for the principal food among the rural population.[4] The consumption of the other grains than rice and naked barley is 0.433 bushel per capita per annum, 0.010 gallon (0.24 *go*) per diem. Wheat and barley are cultivated in Japan, but are chiefly used for making flour and beer, and are excluded from the regular principal food-stuffs.[5]

PRODUCE AND CONSUMPTION OF GRAINS (RICE AND NAKED BARLEY EXCLUDED)

Kind of Grains	Total Produce	Consumption per Man per Year
Millet (*awa*)	9,297,585 bus.	0.205 bus. (40.9 *go*)
Panicum frumentaceum (*hiye*)	3,540,210 "	0.078 " (15.5 ")
Sorghum (*kibi*)	1,911,260 "	0.042 " (8.4 ")
Buckwheat	4,983,910 "	0.110 " (21.5 ")
Total		0.474 " (86.3 ")

Summing up what was stated above in this chapter, and applying the retail prices in Tokyo, the amount and the cost

[4] Some of them are made into dumpling and some other forms, but they are a part of the principal food.

[5] Flour is chiefly used for cake and bread. Bread is used very little, and hardly constitutes a part of the principal food-stuff.

of the grain food consumed per man per day are as follows:

Kind of Grains	Consumption per Man per Day	
	Quantity	Cost
Rice	.117 gallons (2.9 *go*)	5.7 *Sen*
Naked barley	.019 " (0.5 ")	0.9 "
Other grains	.010 " (0.2 ")	
Total	.146 " (3.6 ")	6.6 "

The table clearly shows that the consumption of rice is most essential. Rice constitutes 80 per cent in quantity and 90 per cent in cost of the total grain consumption for the principal food.

Consumption of Legumes.—The soy bean (soja bean, *daizu*), which is very rich in proteins and fats, is the most important legume in Japan. It is a remarkably good substitute for meat and other protein foods. It is very low in market price but its nutritive value is very high. The Buddhists, forbidden to eat meat of any kind, early discovered that this legume would take the place of meat. The essential element of the most common dishes in daily use, such as *miso*, *shoyu*, and *tofu*, is soy bean, and the numerous soy bean recipes are favorite relishes of the people.

The total produce of the soy bean crop amounts to 17,557,320 bushels and the consumption per capita per annum is 0.386 bushel. The produce and the consumption of other legumes are shown in the following table:

Kinds	Total Produce	Consumption per Man	
		Per Year	Per Day
Soy beans	17,557,320 bus.[a]	0.386 bus. (77.2 *go*)	0.008 gal.
Small red beans	4,735,725 "	0.104 " (20.8 ")	
Peas	1,889,850 "	0.042 " (7.2 ")	0.004 "
Beans (*soramame*)	2,508,765 "	0.055 " (11.0 ")	
Total	26,691,660 "	0.587 " (116.2 ")	0.012 "

Consumption of Vegetables.—The most important vegetables in Japan are sweet potatoes and *daikon*. The pro-

[a] Soy beans used for other purposes than food are included.

duction of sweet potatoes amounts to 3,676,883,393 kilograms and the consumption per capita per annum is 80.8 kilograms, 221 grams per diem. Such an enormous consumption is due to the fact that sweet potatoes are used in the southern part of Japan as a part of the daily main food. Moreover they are eaten a great deal between regular meals as a kind of refreshment.

The crop of garden radish (*daikon*) amounts to 2,544,655,781 kilograms. The consumption per capita is 55.9 kilograms per annum, 154 grams per diem. Radishes are commonly used as pickles which are known by the name of *takuwan-zuke*. They are prepared by being first dried and then pickled in a mixture of rice bran and plenty of salt. The *takuwan-zuke* constitutes one of the three most common food articles, especially among the lower class of people. The other two are rice and *miso*.

Other vegetables are produced and consumed in the quantities shown in the following table:

CONSUMPTION OF VEGETABLES

Kinds	Amount of Produce (kilogram)	Consumption per Man	
		Per Year (kilogram)	Per Day (Gram)
Sweet potatoes	3,676,883,393	80.8	221
Garden-radishes (*daikon*)	2,544,655,781	55.9	154
White potatoes	698,596,268	15.4	41
Yams (*taro*)	605,113,680	13.3	38
Vegetable-greens	454,751,880	10.0	26
Eggplants	331,364,888	7.3	19
Squash	258,058,635	5.7	16
Turnips	177,209,228	3.9	11
Burdock	160,877,280	3.5	9
Onions (*negi*)	120,903,938	2.7	7
Carrots	105,980,333	2.3	6
Watermelons	87,124,718	1.9	5
Bamboo shoots	78,346,316	1.7	5
Cabbages	49,068,120	1.1	3
Konnyaku	45,383,509	1.0	3
Melons	39,467,033	0.9	2
Myoga	32,764,586	0.7	2
Onions	20,497,774	0.5	1
Peppers	2,737,931	0.06	0.2
Lily bulbs	2,411,419	0.05	0.1
Tomatoes	2,270,130	0.05	0.1
Total		208.76	569 4

Consumption of Fruits.—In Japan four fruits may be selected as the most important; namely, plums, mandarin oranges, persimmons, and pears. Plums are chiefly consumed in a preparation called *umeboshi* which is made by first drying and then pickling the fruits in plenty of salt. The *umeboshi* is widely used for light meals, especially among the poor classes of people. As a consequence of being inexpensive and appetizing it is consumed in great quantities throughout the country. The *umeboshi* and the pickled radish (*takuwan-zuke*) are unexcelled as appetizers, giving a relish that would otherwise be lacking to the plain boiled rice.[6] Generally speaking, fruit, except plums, is used only as a refreshment between meals, and has little value as a regular food-stuff.

The following table shows the production and the consumption of fruits:

CONSUMPTION OF FRUITS

Kinds	Amount of Produce (Kilogram)	Consumption per Man per Year (Gram)
Mandarin oranges (*mikan*)	174,037,106	3,825
Persimmons	150,163,174	3,279
Japanese pears	74,833,091	1,646
Summer oranges (*natsudai*)	49,647,971	1,091
Peaches	41,109,056	904
Other kinds of oranges	38,699,659	848
Apples	31,432,159	690
Persimmons (dried)	14,387,895	315
Grapes	13,797,915	283
Japanese medlar (*biwa*)	9,786,660	214
Navel oranges	7,293,908	161
Figs	3,309,083	71
Pears (foreign)	2,235,990	49
Chestnuts	2,098,766	38
Cherries	1,062,030	23
Other fruits	628,894	15
Plums (*ume*)	2,575,029 bus.[7]	0.5 gals.
Total	.....	13,452[8]

[6] Boiled rice is served in bowls. The common bowl holds about a pint, and about three bowls, on an average, are consumed at each meal.

[7] Plums are measured in bulk.

[8] Plums not included.

Consumption of Animal Food.—In Japan, animal protein, which is the most important nutrient, is chiefly obtained from fish. Meat as a whole is not so widely used as to be called an important national food-stuff. Almost two million people are engaged in the fishery business, and more than four hundred kinds of fish are caught in Japanese waters. The fish produce and its consumption per capita are shown in the following table. The total of the consumption per

CONSUMPTION OF FISH

Kinds	Produce per Year (Kilogram)	Consumption per Man per Year (Gram)
Sardine[9] (*ma-iwashi*)	146,485,579	3,214
Sardine (*seguro-iwashi*)	104,904,353	2,306
Herring[10]	75,122,441	1,650
Skipper (*samma*)	59,820,671	1,315
Bonito[11]	49,442,785	1,110
Flounder	48,694,875	1,088
Mackerel	33,510,495	735
Salmon[12] (*saké* and *masu*)	32,672,205	720
Cod fish[13]	30,694,103	675
Yellow-tail (*buri*)	22,412,839	491
Polluck (*suketo*)	20,243,276	446
Tai (species of porgy)	16,904,846	371
Horse mackerel (*Aji*)	11,854,775	263
Maguro (species of tunny)	12,017,134	264
Shirk (*fuka*)	11,018,704	242
Dolphin	2,624,216	241
Flying fish	6,623,696	
Kamasu (Barracuda)	1,708,924	
Carp	300,301	191
Ayu (Plecoglossus aliivelis)	288,769	
Eel	276,059	
Grey-mullet	5,575,204	124
Sawara (Cybium)	5,138,258	113
Hirame (Paralichtys)	4,317,420	94
Kurodai (species of porgy)	3,252,394	71
Others[14]	.....	1,901
Total	.....	17,625

capita is 17.625 kilograms per annum, 49 grams per diem.

[9] Export, 220,680 kg., subtracted.
[10] For other use than food, 70 per cent excluded.
[11] Export, 42,664 kg., subtracted.
[12] Import of salted salmon, 426,504 kg., added.
[13] Export, 13,799,063 kg., subtracted.
[14] Calculated from the price of the other kinds, the cost is 12,166,283 *yen*.

The cost of the total fish produce is 69,731,240 *yen*. Subtracting the cost of the fish exported, 671,773 *yen*, from the total cost, we have the balance, 69,059,467 *yen*, for the cost of the fish consumption in Japan. The cost per capita will be 1.518 *yen* per annum, 0.4 *sen* per diem.

Besides the fish above mentioned, shell-fish and a few other sea foods are consumed. The cost of the total shell-fish produce is 3,322,658 *yen*. Subtracting the value of the export, 1,541,734 *yen*, from the total cost, we have the balance of 1,780,924 *yen* for the national consumption of shell-fish. The cost of the consumption per capita is 39.2 *sen* per annum, 0.1 *sen* per diem. The total amount of the consumption per capita per diem is 6 grams.

The other kinds of sea food products are in two different groups; namely, the animal group and the plant group. The former includes the cuttle fish, the octopus, and the shrimp. The cost of the consumption per capita of this group is 10.4 *sen* per annum, 0.03 *sen* per diem. The latter includes two kinds of seaweed. The cost of the consumption per capita per annum is 4.6 *sen*. The amount of the consumption per capita per annum is 1,192 grams.

CONSUMPTION OF THE OTHER SEA FOOD PRODUCTS

Kinds	Amount of Produce (Kilogram)	Amount of Cost (*yen*)	Consumption per Man per Year (Gram)
The First Group:			
Surume-ika[15] (kind of cuttle-fish)	41,483,528	867,028	915
Shrimp (*yebi*)[16]	20,497,628	1,346,665	450
Octopus (*tako*)	10,140,863	1,030,703	223
Ika (kind of cuttle-fish)	5,300,545	655,857	117
Kensaki-ika (Squid)	4,970,145	622,062	109
Spiny lobster	832,748	196,725	18
Total	.....	4,719,040	1,832
The Second Group:			
Konbu (Laminaria japonica)	49,106,629	1,340,530	1,080
Tengusa (kind of seaweed)	513,484	739,640	112
Total	.....	2,080,170	1,192

[15] Calculated by subtraction of 20,353,057 kg. of export.
[16] Calculated by subtraction of 2,471,445 kg. of export.

THE CONSUMPTION OF SHELL-FISH

Kinds	Amount of Produce (Kilogram)	Consumption per Man per Year (Gram)
Oysters	20,556,169	454
Asari (Tapes)	20,141,486	443
Torigai (Cordium)	7,438,999	165
Clams	6,302,805	139
Razor clams	3,914,696	86
Others[17]		866
Total		2,153

Consumption of Meat.—In western countries meats are counted as the most important food, but it is quite different

CONSUMPTION OF MEATS, EGGS, AND MILK

Kinds[19]	Production (Pound)	Consumption per Man per Year	
		Amount (Pound)	Cost (*sen*)
Beef	69,735,327	1.535	34.3
Veal	2,037,168	0.045	0.7
Horse meat	11,984,166	0.264	3.7
Pork	17,711,919	0.389	5.5
Mutton	45,848	0.029	0.6
Goat meat	83,785		
Chicken	6,027,602[20]	0.269	10.8
Goose	166,861[20]	0.009	4.2
Eggs (chicken)	801,693,762	18 (pieces)	46.2
Eggs (goose)	6,692,820 (pieces)		
Milk (cow)	1,372,400 (gals.)	1 (quart)	15.0
Total			1.21 *yen*

[17] Calculated from the price of the other kinds, the cost is 1,282,560 *yen*.

[18] Meat is used to some extent by the urban population, but not by the rural population. The Japanese as a whole do not consider meat an indispensable food.

[19] The imports of condensed milk, 2,089,731 dozens of cans, and of eggs, 1,241,841 pounds, and of a few other kinds of meat stuffs are not included.

[20] There are no statistics of the production of chicken and geese; the figures given are the number alive at a given time. I have estimated the consumption of these articles on the assumption that during a year the consumption is one half of the number alive at a given time.

in Japan as a whole.[18] The largest amount consumed of any kind of meat is only 1.535 pounds of beef per capita per annum. All the other kinds of meat average much less than one pound a year. The cost of meat, including eggs and milk, amounts only to 1.21 *yen* per capita. The consumption of milk per capita per annum does not reach quite one quart. The consumption of the various kinds of meat, eggs, and milk is shown in the table on page 48.

Consumption of Sugar and Salt.—In order to make the most of the nutrients contained in food, it is requisite to have good cooking with proper seasoning. Sugar and salt serve as the leading elements in seasoning. Sugar is important not only as a nutrient, but also as an indispensable material of condiments. One may probably relate the consumption of sugar to the progress of civilization. A growing use of sugar seems to indicate a growing civilization. The sugar production at present in Japan is limited to the Island of Formosa and to some parts of southern Japan, and consequently imported sugar is used in great quantity. Owing to a heavy protective tariff in the interests of native sugar, the price of sugar in Japan is scarcely exceeded anywhere in the civilized countries. This fact is naturally a barrier to the free use of sugar. In 1913 it was produced as follows:

Jaggery[21]	84,899,928 *kin*
Muscovado sugar	22,907,364 "
Brown sugar	1,670,290 "
Molasses	308,692 "
Total	109,786,274 "

Adding 543,801,337 *kin* of imported low-grade sugar (chiefly sugar under Dutch standard Nos. 11 and 15) costing 36,771,327 *yen*, and then subtracting the exportation of refined sugar, 168,766,922 *kin*, and candy sugar, 10,358 *kin*, we have remaining 484,810,331 *kin* for home consumption. The consumption per capita per annum is 10.7 *kin* (14.1 pounds), 17 grams a day. Its cost, on the basis of 18 *sen* a *kin* as the average price of sugar, will be 1.926 *yen* per

[21] Jaggery sugar is a coarse sugar.

annum, 0.53 *sen* per diem. Sugar is used most commonly for confectionery, and is not in much demand for cooking purposes. In the poorer rural districts it is literally true sugar is not used at all except very little as a form of sweets.[22]

Salt is an absolutely necessary food element. The habitual taste of the majority of the Japanese being inclined to salt, its consumption is naturally very great. Such national food articles as *shoyu*, *miso*, and *takuwan-zuke*, which are used everywhere in great quantity, have salt for their essential ingredient. The area of Japanese salt land is 14,586 acres in all, and the total produce of salt is 1,033,445,265 *kin*. That is, the consumption per capita is 30 *kin* (39.6 pounds) per annum, 49 grams per diem. Owing to the fact that salt is under the control of the Japanese government, its price at present is very high. The government purchases it at 1.08 *yen* per 100 *kin*, and sells it at 2.40 *yen*.[23] The consumption per capita is 72 *sen* per annum, 0.2 *sen* per diem.

The function of salt as a food is contrary to that of sugar, and the greater use of the former means a smaller consumption of the latter. Until a certain limit is reached, human taste as it advances craves more and more the use of sugar in cooking.

Consumption of Liquor, Tea, and Tobacco.—Liquor, tea, and tobacco are not strictly food articles, yet they have a close relation to food consumption. They have little value as nutrients; at best they serve only as stimulants. However, their cost is disproportionately high, and they should be considered in the class of luxurious consumption.

Broadly speaking, *saké* is the general term for all kinds of Japanese alcoholic liquors; namely, *shinshu*, *dakushu*, *shirosake*, *mirin*, and *shochu*. In its narrow sense, it means *shinshu* only, which, being the most common, may be called the national drink of Japan. It is brewed from rice and contains 15 or 16 per cent of alcohol. The produce of *saké* of all kinds amounts to 22,508,935 gallons. Subtracting

[22] It averages 0.5 to 1 pound per capita per annum (see page 31).
[23] The total amount of the sale is 23,130,000 *yen*.

106,730 gallons of exported *saké*, we have 22,402,205 gallons for consumption in Japan. The consumption per capita is 38 pints per annum, 0.44 gills per diem. The price of the ordinary grade of *saké* is about 26 *sen* per quart, and the cost of one man's consumption will be 4.95 *yen* per annum, 1.5 *sen* per diem.

Besides the native drinks, we have the imported liquors; namely, wine, 470,171 litres (241,825 *yen*), whiskey, 149,744 litres (121,006 *yen*), and champagne, 16,262 litres (16,262 *yen*). The consumption of foreign liquor is not important in the national diet because its use is limited to a few classes of people.

The extent of the tobacco fields of Japan is 72,824 acres, and the produce of tobacco leaves is 6,761 kilograms.[24] The consumption per capita is 1,485 grams per annum, 4.09 grams per diem. Besides the home product we have the import amounting to 927,390 kilograms (951,390 *yen*) of tobacco leaves and 176,643 *yen* worth of the manufactured tobacco. Subtracting the export, the total amount of tobacco sold in Japan is worth 74,849,000 *yen*. Thus the consumption per capita is 1.666 *yen* per annum, 0.45 *sen* per diem. It is interesting to know that the greatest part of the tobacco consumed is *kisami*-tobacco (chopped tobacco), the brand used by the lower class of people. The amount of this tobacco sold is worth 51,480,000 *yen*, and 1.132 *yen* is the average paid per capita per annum. This fact shows that the habit of smoking prevails widely among the poor people.

The common beverage in Japan is green tea. Of this there are a great number of grades, ranging in price from 20 *sen* to 10 *yen* a pound, so that the poor and the rich can take their choice. The production of tea and its prices are as shown in the table on page 53.[25]

The consumption of tea per capita is 713 grams per annum, 2 grams per diem, and the cost is 32.8 *sen* per annum, 0.1 *sen* per diem.

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[24] Produce per acre is 584 kg.

[25] According to the report of the Agricultural and Commercial Department in the Official Gazette, February 3, 1915.

NATIONAL DIET

Kind	Consumption per Man		Cost per Man per Day[26] (*sen*)
	Per Year	Per Day	
Rice[27]	5.32 bus.	.117 gals.	.....
Barley (naked)[28]	0.87 bus.	.019 gals.	.....
Other grains	0.47 bus.	.010 gals.	.....
Total (grains)	6.66 bus.	.146 gals.	6.60
Legumes	0.59 bus.	.012 gals.	0.39
Garden radishes	55.9 kg.	154 g.	.....
Sweet potatoes	80.8 kg.	221 g.	.....
White potatoes	15.4 kg.	41 g.	.....
Other vegetables	56.7 kg.	155 g.	.....
Total (vegetables)	208.8 kg.	571 g.	2.00
Fish	17.6 kg.	49 g.	0.40
Shell fish	2.2 kg.	6 g.	0.10
Seaweeds	1.2 kg.	3 g.	0.01
Other water products	1.8 kg.	5 g.	0.03
Total (water products)	22.8 kg.	63 g.	0.54
Beef and veal	1.58 lb.	1.9 g.	0.10
Pork, horse meat, mutton, and goat meat	0.68 lb.	0.8 g.	0.03
Chicken	0.27 lb.	0.4 g.	0.03
Eggs (chicken and goose)[29]	17.8 pieces	2.7 g.	0.13
Milk	1 qt.	.....	0.04
Total (meat, fowl, and milk)	.....	.....	0.33
Fruits[30]	13.5 kg.	37 g.	0.40
Sugar	14.1 lbs.	17 g.	0.53
Salt	39.6 lbs.	49 g.	0.20
Total (sugar and salt)	.....	.....	0.73
Tea	0.7 kg.	1.9 g.	0.10
Alcoholic liquor[31]	38 pints	0.44 gill	1.50
Tobacco	1.5 kg.	4.1 g.	0.45
Total (drink and tobacco)	.....	.....	2.05
Grand Total	.....	.....	13.04

[26] Based on retail prices in Tokyo, 1914, taken from the Annual Report of the House of Commerce.

[27] Price at 19.70 *yen* per *koku* (4.92 bushels).

[28] Price at 12.26 *yen* per *koku*.

[29] One egg weighs 54 grams.

[30] Plums not included.

[31] The figure is my estimate, imported liquor not included.

PRODUCTION OF TEA

Kind	Amount (Kilogram)	Cost (*yen*)	Price per *kwan* (*yen*)
Gyokuro	331,133	513,064	5.81
Sencha	22,482,461	12,921,705	2.16
Kocha (red tea)	27,570	17,769	2.42
Woroncha	3,458	2,253	2.44
Bancha	8,707,238	1,207,715	0.52
Powdered *sencha*	799,020	143,247	0.67
Powdered *kocha*	525	86	0.61
Powdered *woroncha*	139	22	0.29
Rekicha	44,366	81,630	.....
Goishicha	53,693	6,157	.....
Hakucha	60,000	9,600	.....
Total	32,455,603	14,903,248	.....

Summing up all of the food consumption, the national diet of Japan is as shown in the table on page 52.

In comparing the national diet with the standard diet suggested by the Bureau of Hygiene of the Japanese government, we find that the former shows a great deficiency in nutritive value, as may be seen in the following condensed table:

	National Diet	Standard Diets[32]		
		No. I	No. II	No. III
Grains	.146 gallons	.16 gallons	.16 gallons	.16 gallons
Legumes	.012 gallons	19 grams	19 grams	199 grams
Vegetables	571 grams	206 grams	300 grams	.....
Meat and fowl	5.8 grams	225 grams	108 grams (or 2 eggs)	113 grams
Fish and shell-fish (water products)	63 grams	.....	244 grams	94 grams
Total Cost	13.04 *sen*	44.4 *sen*	33.0 *sen*	32.1 *sen*

The following are conspicuous facts in comparison: (1) In grains—that is, the main food—the national diet is deficient only to the amount of 0.18 gram per diem. Of course, for rice cheaper grains are in part substituted, but the nutritive value is not impaired by that change.

[32] See pages 23, 24. *Miso* excluded.

(2) Vegetables are consumed to an amount exceeding twice the amount prescribed by the standard diet. Excepting a small quantity of fish, practically the whole meal is composed of plant food. Generally speaking, then, it is fair to say that the Japanese are vegetarians.

(3) The greatest deficiency in the national diet is in animal food. Since meat is consumed only to the extent of 5.8 grams per diem, fish is chiefly depended upon for animal protein. Accordingly fish should be consumed to the extent of about 244 grams, instead of only 63 grams, which is the actual amount supposed to be eaten at present.

CHAPTER VI

Comparison of Rice and Wheat as the Principal Food

In Japan rice stands so high in popular esteem that it is almost considered to be a sacred cereal. Thousands of shrines are built in farming districts, surrounded on all sides by rice paddies, in honor of the god of rice (*Inari*). The annual uncertainty as to whether the rice harvest will be good or not is the fundamental economic problem of the nation. The great dependence upon it is due to the fact that throughout the country rice forms the main part of the three daily meals. For in a country like Japan, where rice culture has developed in a unique way, it has been an advantageous thing, at least in the time of national self-sufficiency, to use rice as the sole main food.

However, the economic conditions of modern Japan have fundamentally changed since that time of national self-sufficiency. At present it is a great mistake for Japan to keep up her adherence to rice as the sole national staple food. The coordinate use of wheat (bread) and rice is highly desirable for the economic development of the nation. Of course a radical change of the staple food from boiled rice to bread is not desirable at all; but the use of the two kinds of cereal, rice and wheat, for the national staple food would mean great economic advantage in the present time of world economy. The relative quantity of these two cereals for individual consumption should be adjusted to the variable conditions of the grain market, and this will, in turn, adjust the market price of the grains. Such reciprocal adjustment will prove to be highly desirable to consumers.

As the bimetallist proposes the adjustment of the market price of gold and silver by compensatory or equilibratory action, I believe that a similar principle will act to adjust the price of rice and wheat, when both are used as daily

food. Such action is a modification of the Law of Variation, and may be called "equilibratory action in food consumption." If both rice and wheat are used, and the price of rice has risen too high, as was the case in 1914, people will use more wheat and the demand for rice will decrease, and this decrease will cause a lower price for rice. Thus the price of one grain will always counteract that of the other.

In order to bring the Japanese to a realization of the advantage of using two kinds of staple food, it is only necessary to convince them that wheat or bread has also the good qualities fitted to make it one of the main foods in Japan. The following comparisons will furnish the reasons for this statement.

Comparison in Nutritive Value.—As is shown in the following tables, the greatest difference in composition between boiled rice and bread is in the amount of water contained. Because of this fact, the relatively anhydrous

Composition of Boiled Rice and of Bread[1]

	Water	Starch	Protein	Fat	Fibre	Mineral Matters	Sugar
Boiled rice.....	62.85	33.71	3.00	0.04	0.23	0.18	.....
Bread.....	38.09	52.27	7.97	0.09	0.76	0.82	.....

nature of bread does not suit the Japanese taste unless the dishes are so prepared as to contain, unnoticed, water to the necessary amount.

As to the composition of rice and wheat, the latter con-

Composition of Rice and of Wheat[2]

	Water	Starch	Protein	Fat	Fibre	Mineral Matters	Sugar
Rice (cleaned).....	15.25	77.87	5.60	0.70	0.13	0.45	.....
Wheat.....	12.81	74.75	9.37	1.34	1.09	1.66	.....
Flour.....	13.54	70.24	10.87	1.11	0.66	0.53	0.77

tains more protein and fat, and less starch, though the

[1] Articles of Food, by Department of Interior Affairs, pages 3–5.
[2] *Ibid.*

differences are not very great. On the whole the nutritive value of wheat and rice is about the same.

Comparison of the Dietetic Nature of Boiled Rice and Bread.—Rice diet excels bread diet in its dietetic nature, and makes possible meals of much less cost. The commonest diet among the mass of poor people in Japan as a whole consists of boiled rice, soy-bean soup (*miso*-soup), and pickled radish. Boiled rice is an excellent food if used with soy-bean soup, which contains plenty of protein, and with pickled radish, which is a great appetizer for the plain boiled rice. Such a food combination is very cheap and is quite nutritious provided the articles are well prepared and cooked.

But unless care is taken, this advantage in the use of rice as a main food is offset by the danger of malnutrition. In its simplest dietary form, "bread and butter" stands for "boiled-rice-steeped-in-tea and pickled radish." The former diet—that is, bread and butter—is a much better heat producer and a more nutritious diet. But the strong salty taste of pickled radish combined with the plain taste of boiled rice makes the rice diet so palatable as to completely satisfy the appetite without much need of varied side-dishes. Herein lies the danger. Such a diet, however ample in quantity, fails to furnish the right amount of necessary nutrients. The effect of using a diet of this kind, in the long run, is the abnormal distension of the stomach and poor nutrition.

In Japan the total consumption of radish amounts to 2,500,000,000 kilograms and the consumption per capita per diem is 154 grams.[3] According to a local study which I have undertaken in the city of Sapporo, the consumption per family averaged 283 roots in 1913 (one root being about 20 inches in length and 3 inches in diameter). One family eats about 0.8 of a root every day. It is generally the case that the lower the standard of living the greater is the consumption of radish. The use of bread, under such circumstances, would naturally adjust the overuse of radish, and make necessary more variety in the subordinate food.

[3] See page 44.

Comparison in Stability of Market Price of Rice and Wheat.—While wheat is the staple food of the world, the production and the consumption of rice as the principal food are limited to only a few countries. As the Japanese eat rice entirely plain, without any sugar or milk, its quality and taste must be very good. The territory where good rice can be cultivated is limited even in Japan to the main and the southern islands. Parts of Japanese territory, such as Hokkaido, Formosa, Saghalien, and Korea, are excluded from the territory of the good rice supply. The rice which grows in China, India, America, and other foreign countries does not suit the Japanese taste; it forms a low grade known as "foreign rice," a term implying inferiority of quality. Consequently the price of the foreign rice is low in spite of the tariff levied upon it, and it is used generally by the poor class of people. Such restriction of supply for the main article of food in the stage of world economy is a great hindrance to the advancement of national prosperity. Experience shows that the uneven scale between over-production and under-production in rice causes great disturbance to prices in the rice market. In times of abundant crops rice has no foreign market for its surplus; and in time of deficiency no foreign supply of good rice can be expected. The extraordinarily high price of rice in 1912 and the abnormal fall in price in 1915 are good examples of the instability of the market price of rice.

Comparison of Normal Price of Rice and Wheat.—The normal price of rice, due to the following reasons, is and will be higher than that of wheat.

The cost of production of rice is greater than that of wheat. Rice of good quality must be raised in wet fields parceled out into small paddies. There can be little room for the large-scale machine cultivation used in raising wheat. Machine production on a large scale is now generally becoming more and more important from the standpoint of profitable business. Because of the circumstances of industrial development, rice culture, which is necessarily based upon human labor and requires the intensive method

of farming, presents an unfavorable outlook for the future development of profitable farming. Anything that must be done by human labor rather than by machine power will in the future have the tendency to command a high price.

The second reason is found in the increase of rice consumption. On the one hand the individual consumption of rice is greatly increasing with the rise of the standard of living, while on the other hand the national consumption as a whole is also greatly increasing with the increase of population. The increase of individual consumption is due to the fact that the poor class of the population is now beginning to use rice in greater proportion than before. That is, less barley and more rice are used as their main daily food. The following table shows that the individual consumption has greatly increased in the last few years.

ANNUAL CONSUMPTION OF RICE PER MAN

1888–1892	4.74 bu.
1893–1897	4.73 "
1898–1902	4.82 "
1903–1907	4.93 "
1908–1912	5.13 "

This increase in the demand for rice is not accompanied by an increase in the supply. Naturally the price must go up.

The supply of rice cannot be made to increase fast enough to meet the increasing demand. In recent years the area given to rice culture has increased and the method of cultivation has much improved, but the produce per acre has not increased in proportion. According to the figures published by the Department of Agriculture and Commerce, the increase in rice land and in its annual produce are as follows: The average total area of rice land during five years, 1888–1892, was 6,699,552 acres. It increased in 1903 to 7,017,141 acres, and in 1912 to 7,362,377 acres. The produce of rice in 1903 was 232,362,490 bushels, which increased to 251,112,545 bushels in 1912. However, the produce per acre does not increase much in spite of great improvement in methods of farming.

With the progress of agriculture in the future, some

THE PRODUCE OF RICE PER *Tan*

1903	8.121 bu.	1908	8.89 bu.
1904	8.93 "	1909	8.93 "
1905	6.63 "	1910	7.91 "
1906	7.99 "	1911	8.70 "
1907	8.44 "	1912	8.36 "

increase in rice produce per acre can be expected. Yet, in the light of past facts, the expectation must not be too sanguine.[4] The law of diminishing returns is ever working; it will grow more and more effective year after year. Human labor in agriculture is constantly becoming more expensive. The prospect of either absolute or relative increase in rice produce is rather unfavorable. Foreign rice, though not suited to the Japanese taste, must be imported. At present the consumption of rice in Japan is about ten million bushels greater than the produce.

Comparison of Rice Diet and Bread Diet in Cost of Preparation.—In the first place a bread diet can be prepared more cheaply than a rice diet. The preparation of the latter requires more time and labor than the former. In the ordinary household a maid servant, whose chief duty is to make boiled rice at least once or twice a day, must be hired. She is rightly called in Japanese the *meshitaki-onna*, meaning "girl to cook boiled rice." Several years ago, in the city of Tokyo, a few concerns were established on a moderate scale with the purpose of supplying boiled rice at mealtime three times a day. But the concerns were not able to meet the requirements of the Japanese dietary habits, and they could not keep up the business. The chief reason for the failure may be due to the fact that boiled rice tastes best while it is warm to a certain degree, and it is almost impossible to supply such a food at the time, in the quantity, and of the quality to satisfy every consumer. At present it seems that any plan to prepare the daily supply of cooked rice on a large scale or cooperatively cannot be expected to be a success. Under the circumstances in the individual family the cooking of its rice is the greater part

[4] The estimate of the Department of Agriculture and Commerce is that 325,000,000 bushels will be produced in 1936.

of a woman's daily labor. In case no hired labor is available, the greater part of the housewife's time must be devoted to the task.

Not only in the cooking is the rice diet more expensive than the bread diet, but in the entire preparation of the meal. In the study of the standard diets it was shown that the cost of a rice diet per capita per diem is about 30 *sen*, and that of a bread diet is only 27 *sen*. These estimates were made in the city of Sapporo, where dairy products can be obtained much more cheaply than in any of the great cities of Japan. If by the coordinate use of bread and rice we could save 3 *sen* and one hour's labor every day, it would mean after twenty years the saving in time of almost one whole year and the saving in cost of about 700 *yen* per family.

Practicability of the Bread Diet.—Strong opinions exist that the bread diet, however reasonable and economical it may be in theory, does not suit the Japanese taste. But I believe in the practicability of the coördinate use of bread in the diet. Notwithstanding the differences due to individuality, locality, and nationality, human beings are in general similar in their tastes. The differences are chiefly a matter of custom or long usage. A good example is seen in the consumption of meat and dairy products in Japan. For a very long period before the middle of the nineteenth century they were despised articles of food, eaten only by the outcast class of people. Now they are counted among the favorite articles of food. In the same way bean sauce (*shoyu*), certain kinds of raw fish which are favorites with the Japanese, and several other food-stuffs which are generally disliked by Westerners come to be much relished by those who have eaten them a number of times.

The idea that bread diet can never be a part of the national diet in Japan is usually due to the fact that, in experimenting, bread is substituted for rice without a suitable change in subordinate food, the bread diet is not properly prepared, or the time of experiment is not sufficiently long. If a little effort is made to adapt the bread

diet to suit the Japanese taste, there will be no need to stick to rice as the one national main food.

If the bread diet is to be adopted for wide use in Japan, the following points should be observed: Rice must be used in good quantity along with the bread diet. In the second place the other native food-stuffs should be used as much as possible. To give just a few examples, Japanese noodle (*udon*) should be used instead of foreign macaroni, and Japanese seaweed gelatine (*kanten*) instead of imported animal gelatine. Such substitutions would not only be more palatable to the Japanese taste but would make the cost much lower. Thirdly, the dishes must be prepared and flavored to suit Japanese taste. Lastly, the dining table should be set in artistic Japanese style.

CHAPTER VII

Improvement of Food Consumption

An action almost similar to the law of increasing and diminishing utility may be discernible in the relation between the human body and food consumption. If a man who needs one hundred grams of protein in a day consumes only fifty grams, the natural consequence is that his health is undermined. If he takes one hundred grams, he will make more than a double gain in health and efficiency. Up to a certain point the gain will be greater than the proportional expenditure in food. After the right point is reached, the gain will gradually diminish and health will be affected injuriously by overeating.

There are, therefore, two kinds of waste in food consumption; namely, frugal expenditure, which will result in an underfed body, and prodigal expenditure, which will result in an overfed body. The great mass of poor people have naturally little opportunity of indulging in the second class of waste. But the first class of waste is very prevalent even among the middle class of people. Underfeeding, due to the ignorant consumption of food deficient in nutritive value, results in a deterioration in health. Too often people pay no attention to the harmful effect produced by over-economy in food consumption. Stinginess in food consumption is the worst kind of economic waste. Such a saving in the family budget will cause a great increase in other items of expenditure; and worst of all is the destruction of efficient economic life. In order to maintain an efficient standard of living, rational and economical consumption of food is fundamentally necessary.

The principles which should be observed in order to bring about an improvement in food consumption are as follows:

Distinction Between Market Price and Normal Price of

Food.—This distinction should be made clear in purchasing. The normal price of food is determined primarily by its nutritive value, but its market price is determined chiefly by the relation of demand and supply. These two prices for the same article do not always coincide. The consumer, therefore, must take advantage of the differences and make use of food which has the most nutritive value and the lowest market price. Rare, novel, and attractive food articles and those produced in foreign countries are generally more costly than the ordinary, unattractive articles and those produced in the home country, no matter whether the nutritive value is the same or greater. The more expensive articles should be avoided in food consumption for the efficient standard of life.

Preparation of the Standard Diet.—This should be in accord with the dietary needs of the consumers. Every individual has his special physiological and psychological conditions, together with different dietary habits and circumstances. Consequently the food requirement must necessarily be varied to a certain degree according to different personalities. For example, horse meat, which is more nutritious but less digestible than beef or pork, must be considered a good food for such persons as manual laborers who have strong digestive powers. Cheap food in greater quantity is often more desirable for poor people than costly food in less quantity. In the same way inexpensive vegetable protein in greater quantity is a better nutrient for a certain class of people than expensive animal protein in less quantity. The comparatively low cost of food among Japanese farmers may be partly justified by this principle.

Variety of Food.—It is a defective form of diet which is composed of too much main food and too little subordinate food. As rice is used in Japan to a very great extent with only a little strongly flavored subordinate food, the variety in diet is naturally very slight among the great mass of poor people. The harmful nature of a simple diet is twofold: First, it is hard to get nutrients in sufficient quantity;

second, in case varied diet is obtainable, the intensity of appetite is so great as to cause one to eat more than is physiologically needed. The consequence of such practices is to put the stomach out of order or to bring about general ill health. In order that food may have the proper variety, too much salt should not be used in its preparation. One phase of dietary evolution may be seen in the lessening amount of salt seasoning used in food. The more advanced diet, being less salty than formerly, necessarily produces a desire for more variety. The three kinds of nutrients—proteins, fats, and carbohydrates—can be properly and advantageously absorbed only when food of proper variety is consumed.

From this point of view vegetarianism cannot be justified. It is very difficult to bring about the complementary adjustment of nutrients by the use of vegetables only. Animal food should be a part of a varied diet, because in comparison with vegetables it has a number of superior characteristics: It contains more protein; it is, therefore, more nutritious. It is more easily digested; therefore it is more nutritious. It is cooked much more easily; therefore it is more economical. These advantages overbalance the disadvantages. The disadvantages are that it is more costly, and that unless it is well prepared and cooked it is liable to transmit the germs of distoma. Each animal and vegetable food has its special function as a nutrient. Only through the use of both kinds of food can the nutrients be economically adjusted to compose the ideal diet.

Waste in Food Preparation.—The waste occurs generally in three different ways: the waste of food articles, the waste of heat, and the waste of labor. Parts of food articles that contain nutrients are very often wasted. Such waste is generally due to the ignorance and carelessness of the cook, and can be avoided by proper training and education. The imperfect construction and misuse of cooking stoves and other kitchen utensils lead to only a partial utilization of heat radiation. The old-fashioned way of cooking involved not only a waste of heat but also of labor. Atwater says

that at least one fifth of the food expenditure at present is for absolute waste. Such waste, estimated at about 10 per cent of a family income, would, for a family with $1000 per annum, amount to $100 dollars.

Scientific Method of Preparation.—The object of cooking foods may be summarized as follows: to make digestion easy, to make complete use of the nutrients contained, to promote appetite, and to make eating as pleasant a process as possible. For the realization of these objects it is highly important that application should be made of the result of scientific studies. The frequent consultation of tables which show the amount of nutrient, the price, and the time required for the digestion of various food articles is fundamentally important for the maintenance of an efficient standard of life. After a study of those tables weekly menus should be arranged in order that the diet may be rational as well as economical.

Marginal Utility of Food.—Good health, proper physical exercise, pure air, an attractive dining table and room, and everything that makes the consumer recognize the marginal utility of food in the greatest degree are subjectively important for dietary improvement. Even an ideally prepared standard diet is not so effective to a person who cannot appreciate the subjective value of the diet. On the other hand, to the small farmer who works hard under very favorable natural circumstances, with pure air, beautiful scenery, and so on, an irrationally prepared diet of a poor quality is not so bad as its chemical analysis might seem to indicate.

These are the essential principles for the improvement of food consumption in general. The application of these principles to the improvement of Japanese food consumption is now to be discussed.

In accordance with the advance of society in the last few decades, economic life has become very much more active and complicated. Japan presents the most illuminating examples of such a metamorphosis in economic

life. It is an obvious fact that consumption of food, which is the motive power of human activities, must also be modified to meet the requirements of life under changed circumstances. The food which was consumed in olden times when people could get a living with ease is not adapted to the new era, when the majority of mankind have to work hard under the severe pressure of the high cost of living.

Generally speaking, the diet which is used among the higher classes of Japanese may be artistic and palatable, but its preparation and service take too much time and labor. In a time when living is very costly it is often necessary to sacrifice the artistic for the sake of the substantial. Without entering into the problems of practical cookery, we may give the following suggestions for the improvement of Japanese diet:

Increase in Meat Consumption.—The supply of meat and dairy products should be increased at least tenfold. The price of meat is too high at present; a much lower price is necessary to accommodate the great mass of people. A greater supply of meat is essential for this purpose.

Increase in the Consumption of Leguminous Food.—Japan is very well fitted for the cultivation of legumes, and the people are accustomed of old to their use. Moreover, their nutritive value being much higher than their market value, a greater use of peas and beans would supplement the deficiency of animal protein to a certain degree without much increase in cost.

A Greater Use of Sugar.—To improve cooking a free use of sugar is very important. Most food articles can be made more palatable and consequently more effective in their nutritive value by the use of sugar. For the realization of this end it is fundamentally necessary to lower the price of sugar.

A Greater Use of Wheat.—This is a suggestion against which some authorities argue very strongly. The reasons why the exclusive use of rice for the main food is not desirable have already been discussed.

Less Use of Refreshments between Meals.—Japanese

custom compels the excessive use of refreshments on many occasions. For example it is common etiquette to serve tea and cakes to visitors, no matter what the purpose or the time of the call may be. It is considered impolite either for the visitor to refuse to partake or for the host not to urge the offer of refreshment. In ordinary family life also some food is eaten between meals by both children and adults. Hundreds of cases prove that the irregularly fed and the underfed have cyclical relations to each other. The under-consumption of food necessitates physiologically some eating between regular meals, and this practice naturally lessens the appetite for regular meals. An underfed condition is the result. It may be asserted that the aim of refreshment is not only to nourish the body but also to give enjoyment to the consumer. It is more rational, however, as well as more economical to concentrate the pleasing sensation which comes from food consumption. The efficiency of food consumption can be greatly increased by such concentration. In the case of children and certain persons for whom some supplementary food is necessary, the additional meals should be provided at regular intervals.

No Luxury in Food Consumption.—During the period when Japan enjoyed an unbroken national peace for more than three centuries, diet grew to be elaborate and æsthetic. Little heed was paid to its economic aspects, nor was much attention given to the nutritive value of food articles. Consequently luxury in food consumption became very prevalent even among that class of people who were not well off. For the maintenance of an efficient standard of living such consumption should not be allowed. The nature of luxurious consumption will not again be described.[1] However, the luxuries—liquor and tobacco—should be mentioned here because their nature is somewhat different from that of ordinary food.

It is interesting to know that among the poor class of people a close relation exists between underfeeding and the

[1] See pages 16–18.

habit of using strong drink. Aside from the moral aspect, the use of liquor and tobacco cannot be justified from the standpoint of efficient economic life. Though their nutritive values are almost nil, their market prices are very high. The heavy excise tax on liquor, which is about two *sen* for a third of a pint, is the main cause of its high price. An ordinary grade costs about ten *sen* for a third of a pint. In most cases the pleasing sensation in drinking is overbalanced by the many evils resulting from the drinking habit. The expenditure for such items is a waste and can never be justified in an efficient standard of living. The smoking habit ranks with that of drinking in economic waste. The sale of tobacco in Japan is a government monopoly chiefly for fiscal purposes. The price is naturally very high.

Improvement of the Kitchen.—In the construction of the Japanese house the parlor or "guest room" is generally considered most important. Consequently the best and sunniest room is given over to this purpose in spite of its infrequent use. On the other hand, the location of the kitchen, which is in constant use, is a matter of little consideration. The Japanese cooking stove in common use is primitive in its construction, and therefore very inexpensive. Its use, however, involves much waste in heat radiation, hence it is not so economical as it might seem. The arrangement of the kitchen paraphernalia should be improved to save waste of time and labor.

The experiments in the cooperative kitchen plan which are now being made in the United States are interesting in this connection. The advantages of the cooperative kitchen are the saving of time and labor, the improvement in culinary skill, the ability to obtain better food materials at cheaper prices, the derivation of benefit from social intercourse, and economy in general food expenditure. The disadvantages are the breaking up of the family circle, the inconvenience of coming and going for meals, and the difficulty of pleasing individual tastes. These disadvantages may be minimized by an adequate arrangement of the

dining-room and by an efficient method of serving meals. In order to realize the greatest advantages, a cooperative kitchen should be run on a large scale. But this is only possible in cities where the municipal transportation system is very well organized. Under the present circumstances the only practicable way of carrying on the cooperative kitchen plan in Japan would be to establish it on a small scale among families on the same social and economic plane. This arrangement would be desirable for the maintenance of the efficient standard of living.

PART III

COST OF CLOTHING

CHAPTER VIII

Expenditure for Clothing in Cities

Schedules which were prepared for use in the inquiries in regard to the expenditure for clothing may seem to be itemized with too much detail, but experience in this kind of investigation proves the necessity of detail in order to get the best results. It was desirable also to get statistics from as great a number as possible of representative families in different localities. However, since no fund was available for the employment of paid schedule-reporters who could devote their entire time to the work, the gratuitous services of the domestic science teachers of the girls' high schools in seventeen cities were solicited. Eleven teachers out of seventeen cheerfully volunteered to take up the work out of interest in the inquiry and for the advancement of economic study. Fifty schedules were sent out to each volunteer with instructions for filling them out. Emphasis was placed upon the selection of families who would be representative of the specified income groups. Each family was to be composed of father, mother, and two to four children under fifteen years of age. For the sake of convenience in the inquiries the teachers used a selected number of their domestic science students, who under the supervision of their teachers generally investigated their own families. Since in the Japanese high schools domestic science is taught in the senior class, only the girls in the graduating classes were engaged in filling out the schedules. As high school education in Japan is not free, poor families

cannot send their children to the schools. This is the reason why families of the very poor classes are not included in this study. The schedules were filled out in 1914–1915. Of the schedules received from the domestic science teachers, the number used and the number rejected because of inaccuracy were as follows:

Income Classes (*yen*)	Large Cities[1]			Small Cities[2]		
	Rec.	Rej.	Used	Rec.	Rej.	Used
240–959.....	114	12	102	167	34	133
960–1679.....	102	15	87	187	24	163
1680–3000.....	138	20	118	155	15	140
Total.....	354	47	307	509	73	436

The average of seven hundred and forty-three schedules, however carefully selected, cannot be claimed to be exactly representative of all families similarly situated. Statistical work on a larger scale, however, is beyond the reach of a private undertaking. The leading features of the expenditure for clothing in the Japanese cities are as follows:

(1) The expenditure for clothing is greater in the large cities than in the small cities. This is due to the fact that the social life in the large cities is more showy and demands costlier and better wardrobes.

Family Income	Expenditure for Clothing (per Family)		Per Cent of Total Expenditure of Family	
	Large Cities (*yen*)	Small Cities (*yen*)	Large Cities	Small Cities
240–959 *yen*.....	129.42	128.03	21.5	18.2
960–1679 *yen*.....	194.21	173.68	14.4	13.9
1680–3000 *yen*.....	330.52	291.49	11.6	10.0

(2) The expenditure for clothing relative to total expenditure in the incomes studied here decreases with the increase of income. This result differs from the results of studies prosecuted in the United States, which show

[1] Population more than 200,000.
[2] Population 30,000 to 200,000.

that the expenditure for clothing increases steadily.[3] This

Income	Expenditure for Clothing	
	Average	Per Cent
$600–$699	$ 83.48	12.9
$700–$799	98.79	13.4
$800–$899	113.59	14.0
$900–$999	132.34	14.6
$1000–$1099	155.59	15.5

difference results from the social custom of Japan which puts more stress on matters of costume and manners than on those things that are necessary to rational and economical living. These conditions in Japan necessitate the expenditure of a certain sum for clothing regardless of how small the family income may be. In the small cities, 128.03 *yen*, which is 18.2 per cent of the total expenditure, is the outlay for dress. In the large cities it is 129.42 *yen*, which is 21.5 per cent of the total expenditure. With the increase of income, however, the percentage spent for clothing decreases steadily. In the family with an income of 2905.87 *yen* in the small cities, only 10 per cent is spent for clothing, and in the large cities the family with 2855.82 *yen* income makes an outlay of 11.6 per cent for dress. Thus Engel's law of clothing is not true in Japan.

(3) In the apportionment of expenditure for clothing among the different members of the family the father uses 43 per cent in the large cities and 40.7 per cent in the small cities, and the mother spends 27.8 per cent and 29.8 per cent respectively. A girl needs more than a boy, but their percentages are about the same in the small and the large cities; that is, about 17.5 per cent for a girl and 12 per cent for a boy. The chief reason for the father's large expenditure in Japan, besides the reasons that will be stated in Chapter XI, is that he must have both European and Japanese dress in order to appear properly on different occasions. Generally speaking, however, farmers, merchants, artisans, and a few other persons, especially the

[3] Chapin, p. 162.

people in the middle and poor classes, are not required by the customs and manners of their social circles to wear European clothing.[4] The expenditure for European clothing for the father is a little higher than that for the native costume. Averaging the expenditure of all income classes, the father spends 42.06 *yen* in the small cities and 51 *yen* in the large cities for European clothing, and 37.92 *yen* and 42.67 *yen* respectively are spent for Japanese clothing.

(4) The expenditure for European clothing is limited chiefly to the father and to the children. The use of European clothing results as a whole in greater expenditure for clothing on the father's part, but European clothing for the children frequently means some saving in the cost of their native clothing. Except in very rare cases the mother does not wear European dress, and therefore her expenditure for clothing is all for Japanese costumes.

(5) Japanese dress varies greatly in its style, form, and material. At least three different kinds both of overcoats and garments (padded, medium weight, and light weight) must be provided according to the change of seasons. The material of these costumes is usually different. Generally, silk garments correspond to Sunday suits in America, and the cotton dress is used for ordinary house wear. Rich people and women of the middle class use silk garments entirely. The great diversity of dress is partly due to the fact that the heating system in the ordinary Japanese house is not very effective, and the body temperature must be kept even by clothing more than by the temperature of the room. Such being the case, the expenditure for clothing is naturally great, especially in families living in poor houses.

(6) The costly Japanese costume can be worn for a comparatively long time. The most expensive articles of the native dress are the overcoat (*haori*), the padded garment (*wataire*), the medium weight garment (*awase*), the skirt (*hakama*) for men, and the sash (*obi*) for women, all made of silk weave. Silk costumes are not durable; but since

[4] Even among the higher classes, some people do not like to wear European clothing and they do not possess any.

they are worn on only a few special occasions, probably not more than one or two dozen times a year among people of the middle classes, they may last over a period of ten years or more. Using a dress for such a long period is only possible in a country where fashions do not change so rapidly from year to year as they do in America. On the whole, Japanese clothing is very expensive; for example, in the large cities the value of the father's clothing runs up to 372.86 *yen* in a family with an average income of 602.13 *yen* a year. The length of time, however, that a garment may be worn reduces the yearly expenditure for clothing to 55.33 *yen*.

(7) The following tables show that there is a wide variation in quantity, quality, and kind of clothing according to the difference in each income group and locality. But it is possible to get some conception of the minimum necessary expenditure for clothing according to national habit and custom. Taking the social status of the present day Japan into consideration, the expenditure for clothing of the family with an income of 602.12 *yen* in the large cities would not be far from what may be called the minimum necessary expenditure. In the case of most farmers, merchants, and artisans the cost of European clothing, 32.04 *yen*, may be eliminated. However, in case European dress is not used, the cost of other clothing increases to a certain extent.

YEARLY EXPENDITURE FOR CLOTHING IN THE LARGE CITIES

Family Income (*yen*)	240–959		960–1679		1680–3000	
	Amount (*yen*)	Per Cent of Family Expenditure for Clothing	Amount (*yen*)	Per Cent of Family Expenditure for Clothing	Amount (*yen*)	Per Cent of Family Expenditure for Clothing
Father:						
Japanese clothing	23.29		37.19		67.56	
European clothing	32.04		47.66		73.20	
	55.33	42.8	84.82	43.7	142.01	42.6
Mother	32.29	24.9	53.32	27.5	96.49	29.2
Boy (average age, 8)	18.42	14.2	21.08	10.8	37.81	11.5
Girl (average age, 11)	23.38	18.1	34.99	18.0	55.46	16.7
Total	129.42	100	194.21	100	330.52	100
Number of families	102		87		118	
Average income	602.12		1345.74		2855.82	
Per cent of total expenditure	21.5		14.4		11.6	

VALUE OF CLOTHING AND YEARLY EXPENDITURE FOR CLOTHING OF FAMILIES WITH AN INCOME OF 240–959 *yen* PER YEAR IN THE LARGE CITIES

	Value of Clothing (*yen*)	Expenditure per Year (*yen*)
Father:		
Japanese clothing	195.60	23.29
European clothing	177.26	32.04
	372.86	55.33
Mother	264.12	32.29
Boy (average age, 8)	76.32	18.42
Girl (average age, 11)	128.14	23.38
Total	420.72	129.42
Number of families	102	
Average income	602.12	

VALUE OF FATHER'S CLOTHING AND EXPENDITURE FOR CLOTHING PER YEAR IN THE LARGE CITIES WITH A FAMILY INCOME OF 240–959 *yen*

I. Japanese Clothing

	Tokyo		Nagoya		Kobe		Average		Actual Value[6] (*yen*)	Duration (Year)	Cost per Year (*yen*)
	No.	Value[5] (*yen*)	No.	Value (*yen*)	No.	Value (*yen*)	No.	Value (*yen*)			
Overcoats (silk) (*haori*)	2.6	28.29	3.6	35.63	4.0	55.22	3.4	39.71	19.86	10	1.99
Overcoats (cotton) (*haori*)	3.4	9.58	4.2	11.80	4.2	11.73	3.9	11.04	5.52	4	1.38
Padded garments (silk) (*wataire*)	2.0	14.33	3.0	28.83	2.7	21.95	2.6	21.70	10.85	10	1.09
Padded garments (cotton)	3.9	10.97	7.3	15.44	4.6	12.88	5.3	13.10	6.55	3	2.19
Medium weight garments (silk) (*awase*)	1.0	8.02	3.4	18.91	1.2	8.10	1.9	11.68	5.84	10	0.58
Medium weight garments (cotton)	2.2	4.86	3.3	8.10	2.2	5.24	2.6	6.07	3.04	4	0.76
Light weight garments (silk) (*hitoye*)	2.3	16.17	4.1	19.98	3.0	20.50	3.1	18.88	9.44	6	1.59
Light weight garments (woolen)	1.2	7.08	1.7	8.77	1.8	15.17	1.6	10.34	5.17	3	1.56
Light weight garments (cotton)	4.4	5.91	7.6	15.38	4.7	6.81	5.6	9.37	4.69	3	1.56
Skirts (*hakama*)	1.4	12.55	2.0	28.66	1.5	8.55	1.5	16.59	8.29	5	1.66
Jyuban	3.4	3.70	5.3	4.30	4.4	7.66	4.4	5.22	2.61	3	0.87
Clogs (*hakimono*)	3.8	2.50	4.0	3.08	4.2	2.49	4.0	2.69	1.35	½	2.70
Tabi	3.6	0.99	4.4	1.09	8.2	1.98	5.4	1.35	0.68	½	1.36
Sash (*obi*)	1.8	6.92	3.1	12.11	2.0	8.60	2.3	9.21	4.61	5	0.92
Other Articles	...	19.21	...	19.45	...	17.28	...	18.65	9.33	3	3.11
Total	...	151.08	...	231.53	...	204.16	...	195.60	97.80	...	23.29

[5] The value is estimated by the market value in 1913 when bought new.

[6] The actual value is estimated as one half of the value when bought new.

II. European Clothing

	Tokyo		Nagoya		Kobe		Average		Actual Value (*yen*)	Duration (Year)	Cost per Year (*yen*)
	No.	Value (*yen*)	No.	Value (*yen*)	No.	Value (*yen*)	No.	Value (*yen*)			
Sack coats	2.2	45.60	2.3	52.65	2.4	37.65	2.3	45.30	22.65	3	7.25
Full dress[7]	0.7	25.82	1.1	59.32	0.9	45.82	0.9	43.65	21.83	10	2.19
Overcoats	2.0	32.15	1.5	28.34	2.0	44.50	1.8	35.00	17.50	3	5.84
Hats	2.3	5.61	2.4	4.58	3.1	8.23	2.6	6.14	3.07	3	1.03
Shirts	2.6	8.13	2.6	5.92	3.2	5.15	2.8	6.40	3.20	2	1.60
Undershirts	3.6	5.15	4.2	6.60	4.5	5.58	4.1	5.78	2.89	2	1.45
Trousers	3.5	5.62	3.0	5.56	3.8	4.40	3.4	5.19	2.59	2	1.30
Neckties	2.1	2.03	3.3	2.59	5.5	4.39	3.6	3.00	1.50	1	1.50
Collars	2.4	0.71	3.7	1.50	7.8	1.85	4.6	1.35	0.68	½	1.35
Cuffs	1.2	0.49	0.8	0.32	1.3	0.60	1.1	0.47	0.24	1	0.24
Gloves	1.9	2.18	2.1	3.88	2.2	1.99	2.1	2.68	1.34	2	0.67
Shoes	1.2	5.60	2.4	12.40	1.5	5.80	1.7	7.93	3.97	2	1.99
Rubbers	0	0	0.2	0.38	0.1	0.17	0.1	0.18	0.09	1	0.09
Socks	1.2	0.42	8.0	2.50	5.8	2.18	5.0	1.70	0.85	½	1.70
Scarfs	0.8	1.05	2.1	3.46	1.2	4.50	1.4	3.00	1.50	2	0.75
Handkerchiefs[8]	2.6	0.58	8.2	1.55	6.6	1.32	5.8	1.15	0.58	½	1.15
Umbrellas	1.0	3.16	1.3	3.58	1.6	3.28	1.3	3.34	1.67	2	0.84
Other articles	...	5.00	...	5.00	...	5.00	...	5.00	2.50	3	0.84
Total	...	149.30	...	200.13	...	182.41	...	177.26	88.63	...	32.04
Grand Total	...	300.38	...	431.66	...	386.57	...	372.86	186.43	...	55.33

[7] The frock-coat is generally used for full dress in this class.

[8] Paper handkerchiefs, which are commonly used, are not included in the figures.

VALUE OF MOTHER'S CLOTHING—MOTHER'S EXPENDITURE FOR CLOTHING IN THE LARGE CITIES, WITH FAMILY INCOME OF 240–959 *yen*

	Tokyo		Nagoya		Kobe		Average		Actual Value (*yen*)	Duration (Year)	Cost per Year (*yen*)
	No.	Value (*yen*)	No.	Value (*yen*)	No.	Value (*yen*)	No.	Value (*yen*)			
Silk *Haori*	2.3	25.69	4.3	30.52	3.4	20.56	3.3	25.59	12.79	10	1.28
Cotton *Haori*	3.2	6.09	7.0	24.50	4.5	10.03	4.9	13.54	6.77	4	1.69
Silk *Wataire*	1.8	15.18	3.7	40.11	1.7	14.57	2.4	23.29	11.65	13	0.89
Cotton *Wataire*	2.2	4.00	5.6	16.78	2.9	8.78	3.6	9.85	4.93	3	1.64
Silk *Awase*	1.1	5.35	3.1	27.67	1.2	7.23	1.8	13.42	6.71	10	0.67
Cotton *Awase*	2.0	3.99	4.3	12.10	3.3	6.10	3.2	7.40	3.70	3	1.23
Silk *Hitoye*	2.7	21.60	3.0	16.18	3.5	26.00	3.1	21.26	10.63	8	1.33
Cotton *Hitoye*	4.8	5.69	9.2	17.00	8.9	10.25	7.6	10.98	5.49	3	1.83
Woolen *Hitoye*	1.3	6.87	1.3	4.99	2.0	11.29	1.5	7.72	3.86	3	1.29
Obi (sash)	4.5	49.55	4.3	52.06	4.5	33.01	4.4	44.87	22.44	7	3.21
Silk *Jyuban*	2.9	8.77	3.8	12.51	3.4	12.77	3.4	11.35	5.68	13	0.44
Woolen *Jyuban*	1.8	3.12	3.0	9.50	3.5	6.70	2.8	6.44	3.22	3	1.08
Cotton *Jyuban*	4.3	1.82	4.8	2.76	3.2	1.95	4.1	2.18	1.09	2	0.55
Top-coats	0.8	10.10	1.3	21.22	1.8	32.56	1.3	21.29	10.65	5	2.13
Shawls	1.7	2.56	1.8	3.90	2.5	12.70	2.0	6.39	3.20	3	1.07
Gloves	0.9	0.58	0.6	0.88	1.9	3.15	1.1	1.54	0.77	2	0.39
Umbrellas and parasols	1.4	2.50	2.3	4.14	3.0	8.22	2.2	4.95	2.48	3	0.83
Clogs and sandals	5.0	4.58	4.2	3.80	5.7	4.21	5.0	4.20	2.10	½	4.20
Tabi	4.8	1.07	5.6	1.38	6.2	1.46	5.5	1.30	0.65	½–½	1.30
Handkerchiefs	3.5	0.58	6.0	1.10	3.7	0.75	4.4	0.81	0.41	½	0.81
Obitome	2.2	2.53	3.2	3.85	2.3	2.50	2.6	2.96	1.48	3	0.49
Obiage	1.6	1.56	1.6	2.16	1.2	2.86	1.5	2.19	1.10	3	0.37
Koshihimo	1.3	0.80	3.2	2.07	2.4	2.94	2.3	1.94	0.97	2	0.49
Other articles	....	19.21	...	19.45	...	17.28	...	18.65	9.33	3	3.11
Total	...	203.79	...	330.63	...	257.87	...	.....	.....	...	32.29

VALUE OF BOY'S CLOTHING AND BOY'S EXPENDITURE FOR CLOTHING IN THE LARGE CITIES; AVERAGE AGE, NINE; INCOME GROUP, 240–959 *yen*

	Tokyo		Nagoya		Kobe		Average		Actual Value (*yen*)	Duration (Year)	Cost per Year (*yen*)
	No.	Value (*yen*)	No.	Value (*yen*)	No.	Value (*yen*)	No.	Value (*yen*)			
European dress	1.1	2.92	2.7	8.90	0.8	1.25	1.5	4.36	2.18	1	2.18
Overcoats	1.2	3.70	1.3	7.81	0.7	1.89	1.1	4.47	2.24	2	1.12
Silk *Haori*	0.1	0.48	1.2	7.65	0.6	2.35	0.6	3.49	1.75	10	0.18
Cotton *Haori*	2.0	2.81	3.4	4.26	2.0	3.27	2.5	3.45	1.73	3	0.58
Silk *Wataire*	1.1	3.95	3.1	12.51	3.0	10.99	2.4	9.15	4.58	10	0.46
Cotton *Wataire*	2.5	3.55	3.5	4.32	2.7	4.66	2.9	4.18	2.09	3	0.70
Silk *Awase*	0.6	2.90	1.2	4.20	0.2	0.58	0.7	2.56	1.28	10	0.13
Cotton *Awase*	3.5	5.70	3.5	6.04	4.1	5.98	3.7	5.91	2.96	3	0.99
Silk *Hitoye*	0.8	2.95	2.2	6.70	1.1	3.82	1.4	4.49	2.25	10	0.23
Woolen *Hitoye*	0.8	1.26	0.7	6.14	1.0	2.50	0.8	3.30	1.65	2	0.83
Cotton *Hitoye*	4.4	4.18	6.7	6.14	5.3	6.08	5.5	5.47	2.74	3	0.91
Hakama	1.2	1.10	2.0	3.05	1.8	2.90	1.7	2.35	1.18	2	0.59
Hats and caps	1.2	1.19	1.5	1.57	0.8	0.97	1.2	1.31	0.66	1	0.66
Shirts and undershirts	2.8	1.50	3.1	2.00	0.5	0.60	2.1	1.37	0.69	1	0.69
Trousers	3.2	1.45	2.4	2.18	1.1	1.27	2.2	1.63	0.82	1	0.82
Jyuban	3.3	0.86	6.2	5.20	4.7	2.18	4.7	2.75	1.38	2	0.69
Shoes	1.2	2.81	2.2	4.58	1.4	2.78	1.6	3.39	1.69	1	1.69
Stockings	3.3	0.69	3.7	1.26	2.2	0.57	3.1	0.84	0.42	$\frac{1}{3}$	1.26
Clogs and sandals	3.0	0.89	4.7	1.38	4.2	0.93	8.6	1.07	0.54	$\frac{1}{2}$	1.07
Tabi	3.5	0.69	4.2	1.00	3.2	0.65	3.6	0.78	0.39	$\frac{1}{2}$	0.78
Umbrellas	1.2	1.78	2.3	2.71	1.3	2.85	1.6	2.45	1.23	2	0.62
Other articles	...	7.74	...	7.82	...	7.09	...	7.55	3.78	3	1.26
Total	...	55.10	...	107.63	...	66.16	...	76.32	...	...	18.42

GIRL'S EXPENDITURE FOR CLOTHING IN THE LARGE CITIES; AVERAGE AGE, ELEVEN; INCOME GROUP, 240–959 *yen*

	Tokyo		Nagoya		Kobe		Average				
	No.	Value (*yen*)	No.	Value (*yen*)	No.	Value (*yen*)	No.	Value (*yen*)	Actual Value (*yen*)	Duration (Year)	Cost per Year (*yen*)
European dress	0.2	0.68	0.3	1.14	0.6	2.56	0.4	1.46	0.73	2	0.37
Overcoats	1.0	8.72	1.2	11.23	1.2	7.18	1.1	9.04	4.52	3	1.51
Silk *Haori*	1.1	5.82	2.5	15.66	1.8	8.70	1.8	10.06	5.03	7	0.72
Woolen *Haori*	1.5	6.78	1.0	4.10	2.0	9.13	1.5	6.67	3.34	3	1.11
Cotton *Haori*	1.5	2.60	3.4	5.66	2.3	3.54	2.4	3.93	1.97	3	0.66
Silk *Wataire*	1.8	6.75	3.2	22.50	2.6	15.18	2.5	14.81	7.41	7	1.06
Woolen *Wataire*	0.9	5.02	2.6	10.33	1.5	8.82	1.7	8.06	4.03	3	1.35
Cotton *Wataire*	2.3	2.65	5.3	8.56	3.5	4.70	3.7	5.30	2.65	3	0.88
Silk *Awase*	0.5	3.60	2.4	12.90	1.2	8.93	1.4	8.48	4.24	7	0.61
Woolen *Awase*	1.2	5.71	1.1	3.86	1.3	3.22	1.2	4.26	2.13	3	0.71
Cotton *Awase*	2.0	3.12	3.0	4.50	3.0	5.26	2.7	4.29	2.15	3	0.72
Silk *Hitoye*	1.5	5.23	2.4	8.44	1.8	5.04	1.9	6.24	3.12	7	0.45
Woolen *Hitoye*	1.7	4.82	1.8	3.46	1.7	6.80	1.7	5.03	2.52	2	1.26
Cotton *Hitoye*	4.8	4.05	7.1	7.88	6.0	6.84	6.0	6.26	3.13	3	1.05
Undershirts	...	.....	0.4	0.17	1.1	1.08	0.5	0.42	0.21	1	0.21
Underwear (under petticoat)	1.2	0.78	1.4	1.20	1.7	1.29	1.4	1.09	0.55	1	0.55
Underwear (*Jyuban*)	4.5	3.95	5.6	5.66	4.3	4.28	4.8	4.63	2.32	3	0.77
Obi	2.8	4.74	3.1	12.50	3.5	8.86	3.1	8.70	4.35	3	1.45
Hakama	0.8	1.62	0.5	2.64	1.3	1.89	0.9	2.05	1.03	2	0.52
Hats	0.1	0.21	0.8	1.21	0.8	0.90	0.6	0.77	0.39	1	0.39
Shoes	0.7	3.19	0.2	0.68	1.3	3.79	0.7	2.55	1.28	1	1.28
Stockings	1.1	0.28	0.9	0.32	2.2	0.72	1.4	0.44	0.22	$\frac{1}{3}$	0.66
Clogs and sandals	4.3	2.85	4.1	1.38	4.8	3.10	4.4	2.44	1.22	$\frac{1}{2}$	2.44
Tabi	3.5	0.72	3.2	0.66	3.2	0.78	3.3	0.72	0.36	$\frac{1}{2}$	0.72
Umbrellas and parasols	1.3	2.12	1.7	3.76	1.6	2.78	1.5	2.89	1.45	2	0.73
Other articles	...	7.74	...	7.82	...	7.09	...	7.55	3.78	3	1.26
Total	...	93.75	...	158.22	...	132.46	...	128.14	.....	...	23.38

FAMILY EXPENDITURE FOR MISCELLANEOUS GOODS[9] (CLASSIFIED UNDER "CLOTHING") IN THE LARGE CITIES; INCOME GROUP, 240–959 *yen*

	Tokyo (*yen*)	Nagoya (*yen*)	Kobe (*yen*)	Average (*yen*)
Buttons	2.22	2.33	1.53	2.03
Pins	1.80	1.36	2.50	1.89
Combs	7.88	6.78	3.39	6.02
Face powder	1.87	2.00	1.43	1.77
Perfume and oil	2.50	1.96	1.57	2.01
Hair dressing	4.25	6.01	5.06	5.11
Baths	8.18	9.64	5.88	7.90
Laundry	3.32	2.50	3.60	3.14
Soap, etc.	2.19	1.46	1.92	1.86
Dressmaking	3.42	4.31	4.96	4.23
Other articles[10]	5.00	5.00	5.00	5.00
Total	42.63	43.36	36.84	40.96
Each adult	14.21	14.45	12.28	13.65
Each child	4.74	4.82	4.09	4.55

FAMILY EXPENDITURE FOR CLOTHING OF THE INCOME GROUP, 960–1679 *yen* IN THE LARGE CITIES

	Value of Clothing (*yen*)	Expenditure per Year (*yen*)
Father:		
Japanese clothing	163.24	37.16
European clothing	136.25	47.66
	299.49	84.82
Mother	254.69	53.32
Boy (average age, 7)	42.67	21.08
Girl (average age, 8)	107.31	34.99
Total	704.18	194.21
Number families	87	
Average income of a family	1345.74 *yen*	

[9] The expenditure is included in "Other Articles" of each member of the family in the foregoing tables.

[10] The value is the investigator's estimate.

FATHER'S EXPENDITURE FOR CLOTHING IN THE LARGE CITIES; INCOME GROUP, 960–1679 *yen*

I. Japanese Clothing.

	Tokyo		Nagoya		Kobe		Average		Actual Value (*yen*)	Duration (Year)	Cost per Year (*yen*)
	No.	Value (*yen*)	No.	Value (*yen*)	No.	Value (*yen*)	No.	Value (*yen*)			
Silk *Haori*....	3.2	35.18	7.3	106.30	7.7	102.80	6.1	81.43	40.73	10	4.07
Cotton *Haori*.	4.4	10.71	2.8	4.52	2.7	6.47	3.3	7.23	3.62	4	0.91
Silk *Wataire*..	2.7	17.00	4.0	39.28	5.4	76.49	4.0	44.26	22.13	10	2.21
Cotton *Wataire*....	3.9	12.10	2.7	4.30	2.4	6.24	3.0	7.55	3.78	3	1.26
Silk *Awase*...	2.5	17.87	2.0	19.41	2.1	29.47	2.2	22.25	11.13	10	1.11
Cotton *Awase*	1.9	3.05	1.7	3.10	1.2	4.53	1.6	3.56	1.78	4	0.45
Silk *Hitoye*...	3.2	18.50	3.0	25.55	3.1	30.44	3.1	24.83	12.42	6	2.07
Woolen *Hitoye*	2.7	23.09	2.8	20.28	1.7	12.81	2.4	18.73	9.37	3	3.13
Cotton *Hitoye*	5.0	7.05	7.2	13.33	8.0	18.91	6.7	13.10	6.55	3	2.19
Hakama.....	2.0	20.15	2.2	27.10	1.9	22.90	2.0	23.38	11.69	5	2.34
Underwear...	4.1	7.77	4.3	16.65	4.6	19.42	4.3	14.61	7.31	3	2.44
Clogs.....	4.2	4.02	5.0	4.88	4.7	5.70	4.5	4.87	2.44	$\frac{1}{2}$	4.88
Tabi.....	4.6	1.05	5.1	1.26	5.6	1.55	5.1	1.29	0.65	$\frac{1}{2}$	1.30
Obi.....	3.2	10.96	3.0	21.25	3.5	15.60	3.2	15.94	7.97	5	1.60
Other articles	...	45.51	...	44.33	...	40.54	...	43.45	21.73	3	7.24
Total.....	...	234.01	...	351.54	...	393.87	...	326.48	.....	...	37.16

II. European Clothing

	Tokyo		Nagoya		Kobe		Average		Actual Value (*yen*)	Duration (Year)	Cost per Year (*yen*)
	No.	Value (*yen*)	No.	Value (*yen*)	No.	Value (*yen*)	No.	Value (*yen*)			
Sack coats...	3.0	86.75	3.2	109.68	2.6	63.57	2.9	86.67	43.34	3	14.45
Full dress....	2.2	79.92	1.1	42.19	1.6	60.43	1.6	60.81	30.42	10	3.04
Overcoats....	2.6	40.16	2.5	70.20	2.1	38.57	2.4	49.64	24.82	3	8.28
Hats.....	3.7	9.20	3.4	10.31	3.4	8.30	3.5	9.27	4.64	3	1.55
Shirts.....	3.1	7.90	4.6	11.77	4.0	8.87	3.9	9.95	4.76	2	2.38
Undershirts..	5.8	7.21	4.8	6.67	5.4	9.44	5.3	7.77	3.89	2	1.95
Trousers.....	4.5	7.33	4.3	5.15	4.3	7.24	4.4	6.57	3.29	2	1.65
Neckties.....	3.8	3.20	4.8	5.92	4.7	4.21	4.4	4.44	2.22	1	2.22
Collars.....	5.0	1.12	6.7	1.76	4.1	1.10	5.3	1.33	0.67	2	1.34
Cuffs.....	1.4	0.96	1.2	0.80	1.0	0.25	1.2	0.67	0.34	1	0.34
Gloves.....	2.1	3.55	2.0	4.78	1.6	1.72	1.9	3.35	1.68	2	0.84
Shoes.....	2.4	13.20	2.3	12.60	1.8	10.46	2.2	12.09	6.05	2	3.03
Rubbers.....	0.2	0.43	0.5	1.03	0.3	0.42	0.3	0.63	0.32	1	0.32
Socks.....	4.7	1.44	5.6	2.03	3.4	0.99	4.6	1.49	0.75	$\frac{1}{2}$	1.50
Scarfs.....	1.4	3.10	1.2	4.08	0.9	1.14	1.2	2.77	1.38	2	0.69
Handkerchiefs	2.6	0.69	6.3	1.73	9.9	2.10	6.3	1.51	0.76	$\frac{1}{2}$	1.52
Umbrella.....	1.3	4.06	1.2	3.90	1.4	3.81	1.3	3.92	1.96	2	0.98
Other articles	...	10.00	...	10.00	...	10.00	...	10.00	5.00	3	1.67
Total.....	...	280.22	...	304.60	...	232.62	...	272.49	.....	...	47.66
Grand Total	...	514.23	...	656.14	...	626.49	...	598.92	.....	...	84.82

MOTHER'S EXPENDITURE FOR CLOTHING IN THE LARGE CITIES; INCOME GROUP, 960–1679 *yen*

	Tokyo		Nagoya		Kobe		Average		Actual Value (*yen*)	Duration (Year)	Cost per Year (*yen*)
	No.	Value (*yen*)	No.	Value (*yen*)	No.	Value (*yen*)	No.	Value (*yen*)			
Silk *Haori*....	3.0	35.56	5.3	82.59	5.6	91.76	4.6	69.97	34.99	10	3.50
Cotton *Haori*.	3.7	8.98	3.8	15.71	2.3	7.64	3.3	10.78	5.39	4	1.35
Silk *Wataire*..	3.1	37.60	5.2	90.16	5.6	99.53	4.6	75.76	38.88	13	2.92
Cotton *Wataire*....	2.3	4.76	4.7	18.20	4.6	17.14	3.9	13.37	6.69	3	2.23
Silk *Awase*...	1.8	17.12	2.1	21.66	3.4	49.81	2.4	29.53	14.77	10	1.48
Cotton *Awase*	2.0	4.20	3.3	8.50	2.9	8.15	2.7	6.95	3.48	3	1.16
Silk *Hitoye*...	2.9	26.55	5.3	59.91	5.3	53.59	4.5	46.68	23.34	8	2.92
Cotton *Hitoye*	6.5	9.21	4.2	12.63	7.8	14.18	6.2	12.01	6.01	3	2.00
Woolen *Hitoye*	2.0	12.05	3.2	28.18	1.9	12.30	2.4	17.51	8.76	3	3.92
Obi (sash)....	4.8	57.31	6.1	101.50	7.7	92.63	6.2	83.81	41.91	7	5.99
Silk *Jyuban*..	2.9	15.21	1.8	16.72	3.3	30.01	2.7	20.65	10.33	13	0.80
Woolen *Jyuban*....	2.3	10.26	2.0	7.16	3.0	10.27	2.4	9.23	4.62	3	1.54
Cotton *Jyuban*....	4.0	1.96	4.8	3.11	3.3	2.38	4.0	2.48	1.24	2	0.62
Topcoat.....	1.8	30.00	1.8	26.29	1.4	24.90	1.7	27.06	13.53	5	2.71
Shawl.....	1.7	4.21	3.0	14.60	1.9	4.80	2.2	7.87	3.94	3	1.31
Gloves.....	1.1	0.67	0.8	1.70	0.7	0.74	0.9	1.04	0.52	2	0.26
Umbrella and parasol....	...	3.78	2.1	4.25	1.9	5.89	1.8	4.64	2.32	3	0.78
Clogs and sandals....	5.5	6.18	6.6	7.96	3.4	4.02	5.2	6.05	3.03	½	6.05
Tabi.....	3.7	0.75	4.7	1.13	6.9	1.59	5.1	1.16	0.58	½	1.16
Handkerchiefs	3.9	0.83	7.2	1.33	5.8	1.11	5.6	1.09	0.55	½	1.09
Obitome.....	3.3	4.51	2.4	13.06	3.0	10.55	2.9	9.37	4.69	3	1.06
Obiage.....	2.6	5.65	2.1	5.19	3.1	6.31	2.6	5.72	2.86	3	0.96
Koshihimo...	2.2	2.12	2.3	3.70	2.9	3.81	2.5	3.21	1.61	2	0.81
Other articles	...	45.51	...	44.33	...	40.54	...	43.45	21.73	3	7.24
Total.....	...	344.98	...	589.57	...	593.65	...	509.39	.....	...	53.32

BOY'S EXPENDITURE FOR CLOTHING IN THE LARGER CITIES, AVERAGE AGE, 7; INCOME GROUP, 960–1679 *yen*

	Tokyo		Nagoya		Kobe		Average		Actual Value (*yen*)	Duration (Year)	Cost per Year (*yen*)
	No.	Value (*yen*)	No.	Value (*yen*)	No.	Value (*yen*)	No.	Value (*yen*)			
European dress	0.8	3.75	1.6	10.52	0.9	5.99	1.1	6.75	3.38	1	3.38
Overcoat	1.0	4.73	1.2	11.06	0.8	4.47	1.0	6.75	3.38	2	1.69
Silk *Haori*	0.2	0.98	1.3	8.80	0.9	5.11	0.8	4.96	2.48	10	0.25
Cotton *Haori*	2.9	3.28	3.5	5.32	3.3	7.27	3.2	5.29	2.65	3	0.88
Silk *Wataire*	0.4	2.07	0.8	3.86	1.1	3.79	0.8	3.21	1.61	10	0.16
Cotton *Wataire*	4.8	9.12	3.6	6.20	3.9	7.05	4.1	7.46	3.73	3	1.24
Silk *Awase*	0.1	0.42	0.9	3.86	0.5	2.84	0.5	2.37	1.19	10	0.12
Cotton *Awase*	2.1	3.97	3.6	3.74	2.1	3.24	2.6	3.65	1.83	3	0.61
Silk *Hitoye*	0.8	3.34	2.6	6.67	0.1	0.23	1.2	3.41	1.71	10	0.17
Woolen *Hitoye*	1.7	5.34	1.3	4.62	1.2	2.89	1.4	4.28	2.14	2	1.07
Cotton *Hitoye*	6.2	6.51	5.2	4.86	6.5	6.22	6.0	5.90	2.95	3	0.98
Hakama	1.3	2.02	1.1	1.77	1.2	2.33	1.2	2.04	1.02	2	0.51
Cap	1.8	1.86	2.7	3.20	1.4	1.42	2.0	2.16	1.08	1	1.08
Shirts and undershirts	3.8	1.50	3.0	1.40	4.6	1.90	3.8	1.60	0.80	1	0.80
Trousers	3.0	1.09	3.2	1.24	2.9	1.18	3.0	1.17	0.59	1	0.59
Jyuban	4.2	1.00	2.5	1.82	3.3	1.70	3.3	1.51	0.76	2	0.38
Shoes	1.4	2.86	1.6	4.80	1.2	3.11	1.4	3.59	1.80	1	1.80
Stockings	3.2	0.67	3.3	0.96	3.1	0.45	3.2	0.69	0.35	$\frac{1}{3}$	1.05
Clogs and sandals	3.3	0.58	4.3	0.68	3.4	0.58	3.7	0.61	0.31	$\frac{1}{2}$	0.62
Tabi	4.0	0.75	5.3	1.10	2.6	0.50	4.0	0.78	0.39	$\frac{1}{2}$	0.78
Umbrellas	1.1	1.66	1.3	1.09	0.9	0.41	1.1	1.04	0.52	2	0.26
Other articles	...	16.84	...	16.44	...	15.18	...	16.15	8.08	3	2.69
Total	...	74.34	...	104.01	...	77.86	...	85.37	42.69	...	21.08

GIRL'S EXPENDITURE FOR CLOTHING IN THE LARGE CITIES; INCOME GROUP, 960–1679 *yen*

	Tokyo		Nagoya		Kobe		Average		Actual Value (*yen*)	Duration (Year)	Cost per Year (*yen*)
	No.	Value (*yen*)	No.	Value (*yen*)	No.	Value (*yen*)	No.	Value (*yen*)			
European dress	0.6	2.92	0.1	0.34	0.2	1.25	0.3	1.50	0.75	2	0.38
Overcoats	1.2	3.88	0.8	4.94	1.0	5.85	1.0	4.89	2.45	3	0.82
Silk *Haori*	3.1	21.26	3.2	25.50	3.1	26.03	3.1	24.26	12.13	7	1.73
Woolen *Haori*	2.9	12.65	3.1	13.04	2.7	10.30	2.9	12.00	6.00	3	2.00
Cotton *Haori*	1.7	3.89	4.1	9.13	3.4	7.69	3.1	6.90	3.45	3	1.15
Silk *Wataire*	2.8	30.31	5.2	39.36	2.3	15.32	3.4	28.33	14.17	7	2.03
Woolen *Wataire*	2.4	8.70	2.1	8.71	2.7	9.70	2.4	9.04	4.52	3	1.51
Cotton *Wataire*	3.9	8.28	3.6	7.10	3.3	5.02	3.6	6.80	3.40	3	1.13
Silk *Awase*	1.9	10.25	1.6	11.90	2.3	12.59	1.9	11.58	5.79	7	0.83
Woolen *Awase*	1.8	8.60	1.5	6.13	2.0	6.81	1.8	7.18	3.59	3	1.20
Cotton *Awase*	2.3	3.40	1.9	3.41	2.8	5.41	2.3	4.07	2.04	3	0.68
Silk *Hiloye*	2.9	15.72	2.8	17.70	2.1	12.73	2.6	15.38	7.69	7	1.10
Woolen *Hitoye*	2.0	5.08	1.7	5.33	2.7	6.10	2.1	5.50	2.75	2	1.38
Cotton *Hitoye*	5.7	6.84	9.1	10.63	8.3	9.57	7.7	8.92	4.46	3	1.49
Shirts	1.2	0.88	1.5	1.72	1.2	0.95	1.3	1.18	0.59	1	0.59
Underwear (under petticoat)	1.3	1.25	2.0	1.50	1.3	1.56	1.5	1.44	0.72	1	0.72
Jyuban	3.9	8.85	6.8	9.08	7.1	18.70	5.9	12.21	6.11	3	2.04
Obi (sash)	4.6	20.62	5.9	23.56	5.3	21.75	5.3	21.98	10.99	3	3.66
Hakama (shirt)	1.2	4.76	1.4	4.95	1.5	6.61	1.4	5.44	2.72	2	1.36
Caps	0.6	0.66	0.2	0.50	0.2	0.11	0.3	0.42	0.21	1	0.21
Shoes	1.3	3.93	1.5	4.58	0.8	2.75	1.2	3.75	1.88	1	1.88
Stockings	1.4	0.38	2.8	0.59	1.1	0.26	1.8	0.41	0.21	$\frac{1}{3}$	0.63
Clogs and sandals	3.6	2.11	4.3	2.91	4.1	2.33	4.0	2.45	1.23	$\frac{1}{2}$	2.45
Tabi	5.1	1.09	4.7	2.99	5.0	0.98	4.9	1.02	0.51	$\frac{1}{2}$	1.02
Umbrellas and parasols	1.4	1.80	1.7	2.46	1.1	1.20	1.4	1.82	0.91	2	0.46
Other articles	...	16.84	...	16.44	...	15.18	...	16.15	.....	...	2.69
Total	...	204.95	...	232.23	...	206.75	...	214.62	.....	...	34.99

FAMILY EXPENDITURE FOR MISCELLANEOUS GOODS[11] (CLASSIFIED UNDER "CLOTHING") IN THE LARGE CITIES; INCOME GROUP, 960–1679 *yen*

	Tokyo (*yen*)	Nagoya (*yen*)	Kobe (*yen*)	Average (*yen*)
Buttons	7.45	15.18	5.90	9.51
Pins	11.58	12.33	10.86	11.59
Combs	19.13	20.58	9.77	16.49
Face powder	2.17	1.80	2.53	2.17
Perfume and oil	5.34	4.36	3.38	4.36
Hair dressing	6.03	5.82	6.25	6.03
Baths	12.38	8.50	10.25	10.38
Laundry	8.91	3.69	9.22	7.28
Soap, etc.	5.32	4.66	4.05	4.68
Dressmaking	11.31	9.70	12.92	11.31
Needles, threads	1.90	1.35	1.50	1.58
Other articles[12]	15.00	15.00	15.00	15.00
Total	106.52	102.99	91.63	100.36
Each adult	35.51	34.33	30.54	33.45
Each child	11.84	11.44	10.18	11.15

FAMILY EXPENDITURE FOR CLOTHING; INCOME GROUP, 1680–3000 *yen* IN THE LARGE CITIES

	Value of Clothing (*yen*)	Expenditure per Year (*yen*)
Father—		
Japanese clothing	348.28	67.56
European clothing	220.69	74.45
	568.97	142.01
Mother	542.53	96.49
Boy (average age, 9)	77.14	37.81
Girl (average age, 7)	180.46	55.46
Total	1,369.10	331.77
Number of families	118	
Average income of a family	2,855.82 *yen*	

[11] The expenditure is included in "Other Articles" of each member of the family in the foregoing tables.

[12] The amount is the investigator's estimate.

FATHER'S EXPENDITURE FOR CLOTHING IN THE LARGE CITIES; INCOME GROUP, 1680–3000 *yen*

I. Japanese Clothing

	Tokyo		Osaka		Nagoya		Kobe		Average		Actual Value (*yen*)	Duration (Year)	Cost per Year (*yen*)
	No.	Value (*yen*)	No.	Value (*yen*)	No.	Value (*yen*)	No.	Value (*yen*)	No.	Value (*yen*)			
Silk *Haori*	7.4	127.44	12.9	220.63	9.1	250.66	12.4	156.13	10.4	188.72	94.36	10	9.44
Cotton *Haori*	1.8	4.91	0.8	3.75	3.3	12.03	2.8	13.67	2.2	8.59	4.29	4	1.07
Silk *Wataire*	3.0	48.50	10.9	195.50	7.3	193.28	8.3	132.22	7.4	142.38	71.19	10	7.12
Cotton *Wataire*	2.1	8.04	3.3	13.06	2.9	13.31	5.7	24.16	3.5	14.64	7.32	3	2.44
Silk *Awase*	2.5	32.00	4.8	79.13	5.7	92.20	4.4	73.32	4.4	69.16	34.58	10	3.46
Cotton *Awase*	1.9	3.68	1.8	5.38	3.7	13.43	3.7	17.90	2.8	10.10	5.05	4	1.26
Silk *Hitoye*	2.5	30.42	5.9	85.63	5.3	51.67	4.5	55.79	4.6	55.88	27.94	6	4.66
Woolen *Hitoye*	2.1	13.75	2.5	21.00	2.7	21.40	2.8	22.40	2.5	19.64	9.82	3	3.27
Cotton *Hitoye*	8.5	23.66	5.1	12.88	8.6	15.26	7.8	21.77	7.5	18.39	9.20	3	3.07
Hakama	2.0	27.54	3.4	54.88	3.3	40.50	2.7	20.76	2.9	38.11	19.09	5	3.82
Jyuban	5.9	19.62	6.5	29.38	4.3	11.58	8.7	20.35	6.4	20.23	10.12	3	3.37
Clogs	3.4	7.25	7.5	8.71	3.3	4.33	5.8	5.52	5.0	6.45	3.23	½	6.46
Tabi	5.0	1.35	13.1	3.49	5.0	2.52	8.2	2.06	7.8	2.36	1.18	½	2.36
Obi	2.2	14.50	5.5	31.50	3.2	31.20	4.3	21.38	3.7	24.65	12.33	5	2.47
Other articles	...	91.41	.....	69.80	...	67.07	.....	80.45	.....	77.19	.....	...	12.87
Total	...	454.07	.....	834.72	...	820.44	.....	676.88	.....	696.55	.....	...	67.56

II. European Clothing

	Tokyo		Osaka		Nagoya		Kobe		Average		Actual Value (*yen*)	Duration (Year)	Cost per Year (*yen*)
	No.	Value (*yen*)	No.	Value (*yen*)	No.	Value (*yen*)	No.	Value (*yen*)	No.	Value (*yen*)			
Sack coats	4.5	114.88	2.9	81.50	4.7	153.67	3.1	76.67	3.8	106.68	53.34	3	17.78
Full dress	2.2	107.50	0.9	57.13	2.8	256.67	1.2	69.17	1.8	122.87	61.44	10	6.14
Overcoats	3.0	112.51	2.1	77.50	2.7	58.24	1.8	52.50	2.4	75.19	37.60	3	12.53
Hats	5.2	18.75	4.1	25.13	4.7	29.80	3.3	21.75	4.3	23.86	11.93	3	3.98
Shirts	3.5	8.79	4.4	12.31	8.7	11.35	5.8	11.83	5.6	11.02	5.51	2	2.76
Undershirts	5.4	20.14	4.8	9.21	7.0	12.42	7.5	13.17	6.1	13.74	6.87	2	3.44
Trousers	5.8	15.18	3.8	6.44	6.0	8.76	6.5	7.83	5.5	9.55	4.78	2	2.39
Neckties	12.5	7.50	5.1	6.79	6.9	6.12	5.1	4.03	7.4	6.11	3.06	1	3.06
Collars	15.0	4.37	7.4	1.64	7.3	1.50	7.7	2.50	0.4	2.50	1.25	½	2.50
Cuffs	0.2	0.60	0.9	0.19	1.7	0.41	0.7	0.17	0.9	0.34	0.17	1	0.17
Gloves	1.5	4.25	1.6	3.75	3.3	4.88	1.8	3.67	2.1	4.14	2.07	2	1.03
Shoes	2.8	13.98	2.4	17.13	4.0	34.80	2.7	18.53	3.0	21.11	10.56	2	5.28
Rubbers	0.5	1.12	0.1	0.23	1.0	1.19	0.2	0.33	0.5	0.72	0.36	1	0.36
Socks	5.4	1.80	8.3	3.38	5.7	2.90	6.5	4.05	6.5	3.03	1.52	½	3.04
Scarfs	1.6	8.13	1.0	5.25	3.5	5.42	0.8	3.13	1.7	5.48	2.74	2	1.37
Handkerchiefs	6.0	1.34	10.4	2.64	8.7	1.94	11.3	2.35	9.1	2.07	1.04	½	2.08
Umbrellas	1.5	10.50	1.8	8.24	1.7	6.28	1.7	6.83	1.9	7.96	3.98	2	1.99
Other articles	.....	20.00	.....	20.00	...	20.00	.....	20.00	...	20.00	10.00	3	3.33
Total	.....	471.34	.....	339.46	...	616.13	.....	318.51	...	436.37	218.19	...	73.20
Grand Total	.....	925.41	.....	1174.18	...	1436.57	.....	995.39	...	1117.92	558.96	...	140.76

MOTHER'S EXPENDITURE FOR CLOTHING IN THE LARGE CITIES; INCOME GROUP, 1680–3000 *yen*

	Tokyo		Osaka		Nagoya		Kobe		Average		Actual Value (*yen*)	Duration (Year)	Cost per Year (*yen*)
	No.	Value (*yen*)	No.	Value (*yen*)	No.	Value (*yen*)	No.	Value (*yen*)	No.	Value (*yen*)			
Silk *Haori*	5.8	94.75	8.8	156.88	11.0	172.14	8.5	159.50	8.5	145.82	72.91	10	7.29
Cotton *Haori*	1.5	5.12	2.5	6.31	5.6	17.25	3.3	18.83	3.2	11.88	5.94	4	1.49
Silk *Wataire*	8.7	196.44	10.1	190.63	7.8	163.26	11.0	219.83	9.4	192.54	96.27	13	7.41
Cotton *Wataire*	2.8	12.36	4.8	22.13	4.5	13.90	4.8	18.82	4.2	16.80	8.40	3	2.80
Silk *Awase*	4.0	100.50	6.8	104.21	7.2	91.19	5.7	75.67	5.9	92.89	46.45	10	4.65
Cotton *Awase*	1.5	4.58	3.2	10.88	5.4	15.41	4.0	16.20	3.5	11.77	5.89	3	1.96
Silk *Hitoye*	3.9	52.52	8.3	91.88	8.5	62.76	7.2	88.83	7.0	74.00	37.00	8	4.63
Cotton *Hitoye*	7.5	20.24	8.6	21.87	9.3	17.60	12.3	35.00	9.4	23.68	11.84	3	3.95
Woolen *Hitoye*	3.6	82.29	2.1	17.38	3.2	24.25	2.5	19.67	2.9	19.90	9.95	3	3.32
Obi	7.0	186.36	13.6	293.75	8.9	260.80	15.5	196.67	11.3	234.40	117.20	7	16.75
Silk *Jyuban*	6.5	30.75	5.9	66.63	5.0	45.14	7.0	84.50	6.1	56.76	28.38	13	2.19
Woolen *Jyuban*	2.1	9.54	2.8	6.59	5.5	17.50	3.8	12.67	3.6	11.58	5.79	3	1.93
Cotton *Jyuban*	6.4	13.75	3.8	4.75	2.6	1.13	4.2	4.61	3.8	6.06	3.03	2	1.52
Top-coats	2.6	52.53	2.3	46.13	2.0	34.65	2.0	43.17	2.2	44.12	22.06	5	4.41
Shawls	2.5	21.54	2.1	10.44	2.4	4.95	2.2	10.67	2.3	11.90	5.95	3	1.98
Gloves	1.9	0.90	1.2	1.49	2.5	2.26	1.5	2.58	1.8	1.81	0.91	2	0.46
Umbrellas and parasols	2.5	11.65	2.1	8.61	2.4	12.35	2.2	6.08	2.3	9.67	4.84	3	1.61
Clogs and sandals	3.0	3.37	4.5	4.98	5.1	7.60	6.2	6.58	4.7	5.63	2.82	$\frac{1}{2}$	5.64
Tabi	5.9	1.33	6.7	1.69	5.5	2.83	9.2	2.45	6.9	2.08	1.04	$\frac{1}{2}$	2.08
Handkerchiefs	6.0	1.69	8.9	1.91	8.2	1.57	9.5	1.54	8.2	1.68	0.84	$\frac{1}{2}$	1.68
Obitome	7.1	16.88	3.5	16.38	3.1	8.60	4.0	22.29	4.4	16.04	8.02	3	2.68
Obiage	3.5	8.18	3.6	13.29	3.5	8.85	3.7	15.75	3.6	11.52	5.76	3	1.92
Koshihimo	2.5	3.32	3.8	6.19	3.5	5.44	4.2	6.42	3.5	5.34	2.67	2	1.34
Other articles	....	91.41	....	69.80	....	67.7	....	80.45	....	77.19	38.60	3	12.87
Total	....	958.00	....	1174.80	....	1058.50	....	1148.78	....	1085.06	542.53	....	96.49

BOY'S EXPENDITURE FOR CLOTHING IN THE LARGE CITIES; INCOME GROUP, 1680–3000 *yen*

	Tokyo		Osaka		Nagoya		Kobe		Average		Actual Value (*yen*)	Duration (Year)	Cost per Year (*yen*)
	No.	Value (*yen*)	No.	Value (*yen*)	No.	Value (*yen*)	No.	Value (*yen*)	No.	Value (*yen*)			
European dress	2.7	10.84	2.8	8.89	3.1	26.50	2.7	12.25	2.8	14.62	7.31	1	7.31
Overcoats	1.2	6.36	1.1	7.66	2.0	22.99	1.8	14.60	1.5	12.90	6.45	2	3.23
Silk *Haori*	1.3	7.12	0.7	4.50	0.5	8.13	2.0	17.50	1.1	9.31	4.66	10	0.47
Cotton *Haori*	3.8	5.13	3.2	10.67	3.6	7.75	4.7	6.46	3.8	7.50	3.75	3	1.25
Silk *Wataire*	1.6	8.52	2.1	12.50	1.0	6.83	1.8	12.83	1.6	10.17	5.09	10	0.51
Cotton *Wataire*	3.8	6.00	4.5	9.03	3.9	7.55	3.6	8.67	4.0	7.81	3.91	3	1.30
Silk *Awase*	0.4	2.24	1.5	5.83	1.5	10.21	1.3	7.33	1.2	6.40	3.20	10	0.32
Cotton *Awase*	2.5	4.76	2.1	3.67	2.9	6.10	4.2	5.80	2.9	5.08	2.54	3	0.85
Silk *Hitoye*	1.8	5.72	1.3	4.83	1.5	5.55	2.0	9.83	1.7	6.48	3.24	10	0.32
Woolen *Hitoye*	1.6	6.58	1.7	5.83	1.2	5.64	1.3	6.08	1.5	6.04	3.02	2	1.51
Cotton *Hitoye*	6.1	5.69	4.0	4.83	6.8	8.70	7.3	7.36	6.1	6.65	3.33	3	1.11
Hakama	2.4	3.17	2.3	2.08	1.7	7.21	2.0	4.90	2.1	4.34	2.17	2	1.09
Hats and caps	2.5	1.30	2.1	2.25	3.0	5.24	2.2	2.95	2.5	2.94	1.47	1	1.47
Shirts and undershirts	4.3	1.92	3.7	2.33	6.2	3.45	4.3	2.36	4.6	2.52	1.26	1	1.26
Trousers	4.5	1.95	3.0	1.75	3.4	2.34	2.8	0.96	3.4	1.75	0.88	1	0.88
Jyuban	3.3	1.79	3.3	2.30	4.0	2.60	3.1	3.59	4.4	2.57	1.29	2	0.65
Shoes	2.8	7.46	1.8	4.91	2.2	13.55	1.8	4.87	2.2	7.70	3.85	1	3.85
Stockings	5.2	1.38	3.7	1.45	7.5	0.99	3.4	1.10	5.0	1.23	0.62	$\frac{1}{3}$–$\frac{1}{2}$	1.86
Clogs and sandals	3.7	1.13	4.1	1.21	5.0	2.05	4.7	1.78	4.4	1.54	0.77	$\frac{1}{2}$–$\frac{1}{2}$	1.54
Tabi	3.6	0.69	3.8	0.81	4.5	1.10	6.0	1.27	4.5	0.97	0.49	$\frac{1}{2}$–$\frac{1}{2}$	0.98
Umbrellas	1.2	1.22	1.1	1.25	1.8	2.96	1.5	1.36	1.4	1.70	0.85	2	0.43
Other articles	...	38.80	...	31.60	...	30.67	...	35.15	...	34.06	17.03	3	5.68
Total	...	129.77	...	130.22	...	188.11	...	169.00	...	154.27	77.14	...	37.81

GIRL'S EXPENDITURE FOR CLOTHING IN THE LARGE CITIES; INCOME GROUP, 1680–3000 *yen*

	Tokyo		Osaka		Nagoya		Kobe		Average		Actual Value (*yen*)	Duration (Year)	Cost per Year (*yen*)
	No.	Value (*yen*)	No.	Value (*yen*)	No.	Value (*yen*)	No.	Value (*yen*)	No.	Value (*yen*)			
European dress	1.6	11.57	0.4	3.19	0.5	4.12	0.6	3.60	0.8	5.62	2.81	2	1.41
Overcoats	1.2	10.79	0.3	2.38	1.2	8.60	0.4	2.68	0.8	6.11	3 06	3	1.02
Silk *Haori*	4.3	52.34	4.4	75.30	2.2	20.86	3.9	45.88	3.7	48.60	24.30	7	3.47
Woolen *Haori*	3.1	14.15	2.7	10.40	3.0	12.70	3.1	14.36	3.0	12.90	6.45	3	2.15
Cotton *Haori*	2.5	4.75	3.9	12.53	8.1	14.56	3.3	6.77	4.5	9.65	4.83	3	1.61
Silk *Wataire*	5.3	49.99	5.6	63.53	4.0	34.05	3.5	37.82	4.6	46.35	23.18	7	3.31
Woolen *Wataire*	2.9	15.22	2.7	12.72	3.2	12.20	3.0	12.50	3.0	13.16	6.58	3	2.19
Cotton *Wataire*	3.0	6.24	4.8	10.70	6.5	10.61	3.8	8.07	4.5	8.91	4.46	3	1.49
Silk *Awase*	2.2	13.28	3.2	21.35	4.5	26.22	2.8	22.48	3.2	20.83	10.42	7	1.49
Woolen *Awase*	3.2	12.44	4.1	12.36	3.4	14.25	2.5	9.70	3.3	12.19	6.10	3	2.03
Cotton *Awase*	2.5	2.25	3.4	8.47	6.7	11.43	2.8	5.05	3.9	6.80	3.40	3	1.13
Silk *Hitoye*	4.8	25.12	4.2	33.11	5.8	34.63	2.8	20.52	4.4	28.35	14.18	7	2.03
Woolen *Hitoye*	2.5	6.50	2.8	8.51	3.6	11.03	2.5	8.99	2.9	8.76	4.38	2	2.19
Cotton *Hitoye*	6.8	6.25	7.6	9.60	7.1	8.18	8.0	8.14	7.4	8.04	4.02	3	1.34
Undershirts	1.2	1.03	0.2	0.12	0.5	0.67	2.8	1.72	1.2	0.89	0.45	1	0.45
Underwear (under petticoat)	2.3	1.62	1.2	0.75	1.6	1.35	1.8	1.78	1.8	1.38	0.69	1	0.69
Jyuban	4.8	6.16	8.5	26.47	6.8	18.61	6.1	21.66	6.6	18.23	9.12	3	3.04
Obi	4.2	37.43	6.1	42.03	8.5	54.82	6.4	60.40	6.3	48.67	24.34	3	8.11
Hakama	1.5	6.50	1.2	7.38	1.0	3.98	0.7	1.63	1.1	4.85	2.43	2	1.22
Hats	0.4	0.81	0.6	0.80	0.5	0.40	0.6	0.31	0.5	0.58	0.29	1	0.29
Shoes	1.1	6.88	1.2	4.82	0.9	3.20	1.1	4.60	1.1	4.88	2.44	1	2.44
Stockings	2.7	1.06	4.7	0.85	2.4	0.52	1.8	0.77	2.9	0.80	0.40	$\frac{1}{3}$	1.20
Clogs and sandals	3.8	2.02	6.2	3.30	4.0	8.41	5.5	3.42	4.9	4.29	2.15	$\frac{1}{2}$	4.30
Tabi	8.1	1.68	7.4	1.56	12.8	2.58	6.8	1.52	8.8	1.84	0.92	$\frac{1}{2}$	1.84
Umbrellas and parasols	2.2	4.50	2.3	5.96	1.3	2.12	2.3	4.13	4.0	4.18	2.09	2	1.05
Other articles	...	38.80	...	31.60	.....	30.67	...	35.15	...	34.06	17.03	3	5.68
Total	...	339.38	...	409.79	.....	350.67	...	343.65	...	360.92	180.46	...	55.46

FAMILY EXPENDITURE FOR MISCELLANEOUS GOODS[13] (CLASSIFIED UNDER "CLOTHING") IN THE LARGE CITIES; INCOME GROUP, 1680–3000 *yen*

	Tokyo (*yen*)	Osaka (*yen*)	Nagoya (*yen*)	Kobe (*yen*)	Average (*yen*)
Buttons	8.79	15.20	8.98	12.30	11.32
Pins	15.62	7.24	6.60	4.80	8.57
Combs	72.12	26.01	13.55	48.12	39.95
Face powder	3.54	2.83	2.29	2.63	2.82
Perfume and oil	8.12	6.29	10.20	6.09	7.68
Hair dressing	6.25	8.90	6.87	10.08	8.03
Baths	18.59	12.08	16.25	17.66	16.15
Laundry	15.34	22.17	22.60	17.60	19.43
Soap, etc.	15.56	13.93	13.72	14.80	14.50
Dressmaking	26.52	11.67	17.02	24.68	19.97
	3.78	3.09	3.12	2.60	3.15
Other articles[14]	20.00	20.00	20.00	20.00	20.00
Total	214.23	149.41	141.20	181.36	171.57
Each adult	71.41	49.80	47.07	60.45	57.19
Each child	23.80	16.60	15.69	20.15	19.06

YEARLY EXPENDITURE FOR CLOTHING IN THE SMALL CITIES

	Income 240–959 *yen*		Income 960–1,679 *yen*		Income 1,680–3,000 *yen*		Average	
	Value (*yen*)	Per Cent	Value (*yen*)	Per Cent	Value (*yen*)	Per Cent	Value (*yen*)	Per Cent of Total
Father—								
Japanese clothing	22.30		32.93		58.53		37.92	
European clothing	23.88		40.21		62.09		42.06	
	46.18	37.3	73.14	42.1	120.62	41.4	79.98	40.7
Mother	33.05	25.3	53.21	30.7	91.45	31.4	59.24	29.8
Each boy	23.47	18.0	18.63	10.7	28.84	9.8	23.65	11.9
Each girl	25.33	19.4	28.70	16.5	50.58	17.4	34.87	17.6
Total	128.03	100	173.68	100	291.49	100	197.74	100
No. of families	133		163		140			
Average income	701.81		1,247.06		2,905.87			
Per cent. of total expenditure	18.2		13.9		10.0			

[13] The expenditure is included in "Other Articles" of each member of the family in the foregoing tables.

[14] The value is the investigator's estimate.

Father's Expenditure for Clothing in the Small Cities

I. Japanese Clothing

	240–959 *yen*			960–1,679 *yen*			1,680–3,000 *yen*		
	No.	Value (*yen*)	Cost per Year (*yen*)	No.	Value (*yen*)	Cost per Year (*yen*)	No.	Actual Value (*yen*)	Cost per Year (*yen*)
Silk *Haori*	4.7	47.73	2.39	5.8	70.10	3.51	10.5	154.90	7.75
Cotton *Haori*	3.5	11.41	1.43	2.1	7.47	9.35	2.6	9.32	1.17
Silk *Wataire*	2.7	28.71	1.44	3.8	36.09	1.81	6.7	93.78	4.68
Cotton *Wataire*	3.5	10.53	1.76	2.9	10.89	1.82	2.7	11.22	1.87
Silk *Awase*	1.9	14.64	0.73	3.3	33.10	1.66	3.9	44.73	2.24
Cotton *Awase*	4.1	8.08	1.01	3.0	8.22	1.03	2.7	9.22	1.16
Silk *Hitoye*	1.7	10.30	0.86	3.1	22.28	1.86	4.4	41.41	3.45
Woolen *Hitoye*	0.9	6.81	1.14	2.0	14.83	2.47	2.4	18.96	3.16
Cotton *Hitoye*	5.3	10.21	1.70	6.6	13.40	2.21	8.2	20.29	3.38
Hakama	2.2	17.11	1.85	2.7	28.12	2.81	3.5	52.64	5.27
Jyuban	4.9	6.01	1.00	5.2	10.08	1.18	7.5	22.87	3.81
Clogs	4.2	2.47	2.47	3.7	3.30	3.30	4.2	3.81	3.81
Tabi	3.4	1.07	1.07	5.2	1.51	1.51	7.2	2.17	2.17
Obi	2.6	4.06	0.81	3.3	16.07	1.61	5.3	46.39	4.64
Other articles	...	16.02	2.67	...	28.29	4.72	.....	59.94	9.99
Total	...	195.16	22.30	...	303.75	32.93	.....	591.43	58.53

II. European Clothing

	240–959 *yen*			960–1,679 *yen*			1,680–3,000 *yen*		
	No.	Value (*yen*)	Cost per Year (*yen*)	No.	Value (*yen*)	Cost per Year (*yen*)	No.	Value (*yen*)	Cost per Year (*yen*)
Sack coats	1.5	25.38	4.23	2.7	64.90	10.82	3.1	76.40	12.74
Full dress	0.5	13.89	2.70	1.0	45.55	2.28	1.4	70.85	3.55
Overcoats	1.3	20.88	3.15	2.4	46.11	7.69	2.4	75.35	12.56
Hats	2.5	5.25	0.88	3.2	11.75	19.62	4.0	32.78	5.47
Shirts	1.6	1.95	0.49	2.6	6.71	1.68	5.1	10.05	2.51
Undershirts	3.0	2.81	0.71	3.9	6.12	1.53	6.5	11.12	2.78
Trousers	2.7	2.08	0.52	3.5	4.74	1.19	3.9	5.67	1.42
Neckties	1.6	1.23	0.62	2.7	2.32	1.16	4.4	4.11	2.06
Collars	2.7	0.51	0.52	5.3	1.00	1.00	7.1	1.55	1.55
Cuffs	2.2	0.50	0.52	1.4	0.66	0.33	2.7	0.54	0.27
Gloves	1.5	0.92	0.23	1.8	2.04	0.51	2.8	4.81	1.20
Shoes	1.6	9.42	2.36	2.1	12.99	3.25	2.1	16.18	4.05
Rubbers	0.1	0.24	0.12	0.4	0.65	0.33	0.3	0.72	0.36
Socks	3.7	0.72	0.72	5.3	1.86	1.86	6.5	2.49	2.49
Scarfs	0.9	1.72	0.43	0.9	3.21	0.81	1.5	8.50	2.13
Handkerchiefs	4.4	0.42	0.42	7.8	0.95	0.95	8.9	1.37	1.87
Umbrellas	1.2	2.60	0.65	1.4	4.88	1.22	1.2	7.11	1.78
Other articles	...	5.00	0.83	...	10.00	1.67	...	20.00	3.34
Total	...	95.52	23.88	...	226.44	40.21	...	349.60	62.09
Grand total	...	290.68	48.63	...	511.19	73.14	...	941.03	120.62

MOTHER'S EXPENDITURE FOR CLOTHING IN THE SMALL CITIES

	240–959 *yen*			960–1,679 *yen*			1,680–3,000 *yen*		
	No.	Value (*yen*)	Cost per Year (*yen*)	No.	Value (*yen*)	Cost per Year (*yen*)	No.	Value (*yen*)	Cost per Year (*yen*)
Silk *Haori*	4.3	41.58	2.08	5.8	81.71	4.09	8.3	139.92	6.99
Cotton *Haori*	3.3	12.79	1.60	3.5	12.11	1.38	4.2	12.17	1.52
Silk *Wataire*	5.1	55.12	2.12	6.5	95.42	3.67	11.2	216.31	8.32
Cotton *Wataire*	4.3	12.41	2.07	4.0	15.95	2.66	5.5	20.48	3.42
Silk *Awase*	3.0	29.45	1.48	3.7	39.33	1.97	6.5	85.16	4.26
Cotton *Awase*	3.8	10.90	1.82	3.6	16.16	2.70	3.4	12.53	2.09
Silk *Hitoye*	3.5	20.91	1.31	4.6	44.08	2.76	6.4	72.63	4.54
Cotton *Hitoye*	6.6	13.58	2.26	8.0	18.15	3.03	10.2	26.12	4.36
Woolen *Hitoye*	1.0	6.26	1.04	2.2	14.40	2.40	2.4	18.60	3.10
Obi (sash)	6.7	56.87	4.06	8.3	100.79	7.20	11.7	209.59	14.97
Silk *Jyuban*	2.4	14.48	0.56	2.5	24.42	0.94	3.9	51.89	1.99
Woolen *Jyuban*	1.3	3.18	0.53	2.6	9.50	1.59	3.2	11.36	1.89
Cotton *Jyuban*	2.9	3.66	0.92	4.5	4.40	1.10	5.3	4.79	1.35
Top-coats	1.3	13.33	1.34	1.6	21.49	2.15	1.7	37.46	3.74
Shawls	1.1	3.36	0.56	1.8	6.29	1.05	2.0	8.35	1.39
Gloves	0.8	0.50	0.13	1.0	0.95	0.24	2.1	2.26	0.57
Umbrellas and parasols	1.6	4.41	0.74	2.2	5.16	0.86	2.3	8.40	2.10
Clogs and sandals	3.9	2.78	2.78	4.5	4.11	4.11	5.1	5.99	5.99
Tabi	4.6	1.02	1.02	5.7	1.28	1.28	6.9	1.63	1.63
Handkerchiefs	4.7	0.57	0.57	5.9	0.70	0.70	7.4	1.56	1.56
Obitome	2.7	2.18	0.37	3.4	2.60	0.87	4.4	18.78	3.13
Obiage	2.4	3.18	0.53	2.7	4.31	0.72	3.4	6.94	1.16
Koshihimo	3.6	2.11	0.53	3.2	4.19	1.05	3.7	5.54	2.77
Other articles	...	16.02	2.67	...	28.29	4.72	.....	59.94	9.99
Total	...	165.33	33.05	...	558.74	53.21	.....	1037.89	91.45

BOY'S EXPENDITURE FOR CLOTHING IN THE SMALL CITIES

	240–959 *yen*			960–1,679 *yen*			1,680–3,000 *yen*		
	No.	Value (*yen*)	Cost per Year (*yen*)	No.	Value (*yen*)	Cost per Year (*yen*)	No.	Value (*yen*)	Cost per Year (*yen*)
European dress	0.6	2.95	1.48	6.0	3.73	0.19	1.6	7.11	3.56
Overcoat	1.1	7.87	1.97	0.9	4.59	1.15	1.1	7.32	1.83
Silk *Haori*	0.9	5.54	0.28	0.9	4.57	0.23	0.8	5.64	0.28
Cotton *Haori*	2.9	7.61	1.27	3.1	5.22	0.87	3.5	9.18	1.53
Silk *Wataire*	1.1	6.41	0.32	1.0	6.29	0.32	0.9	5.22	0.26
Cotton *Wataire*	3.6	9.20	1.54	4.2	6.28	1.05	4.1	8.82	1.47
Silk *Awase*	1.0	4.96	0.25	0.5	2.26	0.12	0.9	5.10	0.26
Cotton *Awase*	3.3	7.19	1.20	3.0	4.40	0.74	3.1	8.76	1.46
Silk *Hitoye*	0.8	4.44	0.22	0.2	0.78	0.04	0.6	2.61	0.13
Woolen *Hitoye*	0.5	1.38	0.35	1.2	2.38	0.60	1.0	5.65	1.42
Cotton *Hitoye*	5.5	8.47	1.41	6.2	6.08	1.02	8.2	11.89	1.98
Hakama	1.4	3.16	0.79	1.2	2.59	0.65	1.8	4.28	1.07
Caps	2.6	2.40	1.20	2.4	2.73	1.37	1.9	2.13	1.07
Shirts and undershirts	3.6	2.70	1.35	2.8	1.48	0.74	3.6	2.51	1.26
Trousers	2.2	1.52	0.76	3.1	1.33	0.67	2.4	1.69	0.85
Jyuban	2.3	1.50	0.38	4.9	1.13	0.29	2.9	1.71	0.43
Shoes	1.2	4.19	2.09	1.2	3.03	1.52	1.2	4.39	2.20
Stockings	2.2	0.48	0.96	2.3	0.49	0.74	3.6	0.70	1.05
Clogs and sandals	4.6	0.99	2.97	3.9	1.38	1.88	3.8	0.87	0.88
Tabi	3.1	0.66	0.99	3.6	0.56	5.06	3.5	0.73	0.73
Umbrellas	1.2	1.05	0.26	1.2	1.25	1.25	2.0	2.23	0.56
Other articles	...	8.67	1.45	...	16.15	2.69	...	28.31	4.72
Total	...	93.34	23.47	...	78.70	18.63	...	126.85	28.84

GIRL'S EXPENDITURE FOR CLOTHING IN THE SMALL CITIES

	240–959 *yen*			960–1,679 *yen*			1,690–3,000 *yen*		
	No.	Value (*yen*)	Cost per Year (*yen*)	No.	Value (*yen*)	Cost per Year (*yen*)	No.	Value (*yen*)	Cost per Year (*yen*)
European dress	0.03	0.13	0.04	0.2	0.75	0.19	0.5	1.97	0.50
Overcoats	0.2	1.25	0.21	0.6	4.53	0.76	0.7	3.31	0.55
Silk *Haori*	2.0	15.80	1.13	2.4	20.12	1.43	3.4	36.35	2.59
Woolen *Haori*	1.6	7.25	1.21	2.0	8.16	1.36	2.5	10.82	1.81
Cotton *Haori*	3.2	8.18	1.37	3.3	6.79	1.13	3.7	10.40	1.57
Silk *Wataire*	2.2	18.37	1.31	2.3	19.45	1.39	4.7	50.14	3.58
Woolen *Wataire*	1.5	7.36	1.28	1.9	8.33	1.39	2.5	11.58	1.93
Cotton *Wataire*	3.4	9.36	1.56	4.3	9.70	1.62	4.4	18.57	3.10
Silk *Awase*	1.5	10.60	0.76	2.3	13.56	0.97	2.2	18.72	1.34
Woolen *Awase*	1.6	7.45	1.24	2.0	7.59	1.27	2.6	11.16	1.86
Cotton *Awase*	2.7	6.84	1.14	2.7	5.91	0.99	3.6	9.25	1.54
Silk *Hitoye*	1.6	10.00	0.72	2.0	10.41	0.75	3.5	29.06	2.08
Woolen *Hitoye*	1.7	6.15	1.54	1.8	5.30	1.33	2.3	7.35	1.34
Cotton *Hitoye*	5.5	10.10	1.69	6.9	8.02	1.34	8.1	12.39	2.07
Shirts	0.2	0.21	0.11	0.1	0.14	0.07	0.7	0.46	0.23
Underwear (under petticoat)	0.2	0.10	0.05	0.5	0.34	0.17	1.3	1.86	0.93
Jyuban	3.1	4.79	0.80	5.4	7.26	1.21	6.5	13.96	2.33
Obi (sash)	3.6	13.63	2.27	3.2	13.65	2.28	4.6	46.79	7.80
Hakama (skirt)	1.6	3.88	0.97	1.3	3.37	0.85	1.2	4.04	1.01
Caps	0.2	0.19	0.10	0.8	1.29	0.65	0.7	3.78	1.89
Shoes	0.3	0.98	0.49	0.6	1.88	0.94	1.0	2.67	1.34
Stockings	0.4	0.19	0.29	1.6	0.32	0.48	2.3	0.63	0.95
Clogs and sandals	5.2	2.03	2.03	5.1	2.00	2.00	4.1	2.01	2.01
Tabi	5.0	1.12	1.12	4.5	1.02	1.02	4.5	0.94	0.94
Umbrellas and parasols	1.4	2.21	0.56	1.2	1.89	0.48	1.8	3.77	0.94
Other articles	....	8.67	1.45	...	16.10	2.69	...	23.31	3.89
Total	....	156.82	25.33	...	177.78	28.70	...	340.29	50.58

FAMILY EXPENDITURE FOR MISCELLANEOUS GOODS[15] (CLASSIFIED UNDER "CLOTHING") IN THE SMALL CITIES

	240–958 *yen*	960–1,679 *yen*	1,680–3,000 *yen*
Buttons	1.08	4.01	5.79
Pins	0.37	6.48	9.80
Combs	2.50	8.45	35.43
Face powder	1.44	1.02	2.26
Perfume and oil	2.54	2.13	3.77
Hair dressing	3.07	3.65	4.01
Baths	5.65	5.75	14.62
Laundry	5.23	4.31	8.89
Soap, etc	2.57	2.64	5.42
Dressmaking	2.39	4.91	7.50
Needles, threads	1.22	1.51	2.34
Other articles[16]	5.00	10.00	20.00
Total	33.06	54.86	119.83
Each adult	11.02	18.29	39.94
Each child	3.67	6.10	13.31

[15] The amount of the expenditure is included in "Other Articles" of each member of the family in the foregoing tables.

[16] The value is the investigator's estimate.

CHAPTER IX

National Clothing of Japan

Differences in individual, social, and natural conditions create complications in studying the amount of expenditure for apparel. For the study of the expenditure for clothing, as was the case in the study of food, two different methods of investigation, extensive and intensive, are possible. The national clothing (woven fabrics) may be determined by the extensive method of investigation, though the estimate cannot be claimed to be very accurate owing to the inaccuracy of the statistical data. The first step in this method of investigation is to discover the amount of the total produce of woven fabrics; then, to subtract all exports and add all imports; and finally to divide by the number of the

The Consumption of Silk Fabrics

	National Consumption per Year (*tan*)	Consumption per Man per Year (*sun*)
Figured fabrics	982,851	6.05
Crepes[1]	1,759,024	10.84
Habutaye[2]	949,878	5.80
Nanako	221,734	1.37
Itoori	1,658,267	10.22
Tsumugi and *Futoori*	2,257,200	13.89
Plain silk	1,739,215	10.70
Ro[3]	387,683	2.38
Sukiya	91,208	0.56
Kaiki[4]	1,126,560	6.94
Kasaji (for umbrellas)	153,639	0.95
Hakamaji	203,245	1.26
Other silks	1,916,506	11.79
Total[5]	13,447,010	82.75

[1] Calculated by the subtraction of 45,555 *tan* of export.
[2] 2,195,994 pounds of export not included.
[3] Calculated by the subtraction of 183,269 yards of export.
[4] Calculated by the subtraction of 712,549 yards of export.
[5] *Obiji* (for sash) 894,666 pieces, export of *kohakuori*, 1,365,138 yards, and export of *shitsuhon*, 714,247 yards, not included in the figures.

total population reduced to the equivalent of adult man. For the reduction of the population the scale of equivalents used in the calculation of the national diet is applied for the sake of convenience, since there is not much difference in the scale of equivalents for the consumption of food and that for clothing.

The following tables, and the one on the preceding page, calculated from statistics in the Thirtieth Statistical Report of the Department of Agriculture and Commerce, published in 1915, will explain the general condition of the consumption of woven fabrics in Japan as a whole.

The consumption of silk fabrics in value, calculated by the subtraction of the exports from the total production, is as follows:

The total value of silk fabrics	117,426,286 *yen*
The value of exports	30,100,979 *yen*
	87,325,307 *yen*

The consumption per man per year is 1.92 *yen*.

THE CONSUMPTION OF MIXED SILK AND COTTON FABRICS

	National Consumption per Year (*tan*)	Consumption per Man per Year (*sun*)
Figured fabrics	878,031	5.40
Satins[6]	1,291,884	7.95
Crepes	1,751,613	10.78
Futakoori and other materials	4,837,171	29.79
Kobaikaiki	60,690	0.36
Hakamaji	112,681	0.70
Other materials	2,557,606	15.74
Total[7]	11,489,676	70.72

The value of the total consumption of the mixed silk and cotton fabrics is 29,842,032 *yen*, and 66 *sen* is the value of the consumption per man per year.

The value of the total production of the cotton fabrics

[6] Calculated by the subtraction of the export of 1,242,581 yards.
[7] 2,597,404 pieces (4,299,592 *yen* in value) of *obiji* not included.

THE CONSUMPTION OF COTTON FABRICS

	National Consumption per Year (*tan*)	Consumption per Man per Year (*sun*)
Bleached cotton goods[8]	80,004,437	422.18
Futako and other striped goods	25,296,077	133.49
Kasuri	8,293,615	43.78
Cotton crepes[9]	4,203,259	22.18
Dyed cotton goods	8,833,980	46.60
Cotton flannel[10]	2,923,092	15.43
Mosquito nets	2,113,267	11.16
Hakamaji	450,080	2.38
Other materials[11]	12,665,689	77.98
Total[12]	144,783,496	775.18

is 152,747,694 *yen*. Adding 10,707,429 *yen*[13] of imports and subtracting 25,761,395 *yen* of exports, 137,693,728 *yen* is the amount of the national consumption; and 3.02 *yen* is the consumption per man per year.

The total production of the hempen and linen fabrics in value is 308,358,502 *yen*. Adding 1,161,381 *yen* of imports, we have 309,519,883 *yen* for the total amount of the national

THE CONSUMPTION OF WOOLEN FABRICS AND WOOLEN MIXTURES

	National Consumption per Year	Consumption per Man per Year
Muslin[14]	4,663,505 *tan*	24.60 *sun*
Flannel[15]	123,866 "	0.65 "
Serges and woolen cloth[16]	907,296 "	4.80 "
Total[17]	5,694,667 "	30.05 "

[8] Calculated by the subtraction of 5,192,671 *tan* of export.
[9] Calculated by the subtraction of 10,230,461 yards of export.
[10] Calculated by the subtraction of 9,649,935 yards of export.
[11] Calculated by subtraction of 1,691,694 *tan* of other exports.
[12] The following not included: towels, 4,165,618 dozens; *obiji*, 6,663,709 pieces; export of shirtings, 96,986,780 yards; import of shirtings and sheetings, 27,058,701 yards, cotton flannel, 303,158 yards, satins and Italian cotton, 13,730,437 yards.
[13] Includes hempen fabrics.
[14] Calculated by the addition of 340,500 yards of imports and the subtraction of 688,523 yards of exports.
[15] Calculated by the addition of 385,050 yards of imports.
[16] Calculated by the addition of 3,128,803 yards of imports and the subtraction of 266,973 yards of exports.
[17] The following are not included: blankets, 112,181 pieces; rugs and shawls, 276,662; and other items in value 2,345,508 *yen*.

consumption. The consumption per man per year is 6.81 *yen*.

The total value of the consumption of the woolen fabrics and woolen mixtures is 28,348,603 *yen*. Adding 8,746,329 *yen* of imports and subtracting 1,163,173 *yen* of exports, we see that 35,931,759 *yen* is the sum total of the national consumption; and 79 *sen* is the consumption per man per year.

Summing up all the figures given in the foregoing tables, the national clothing of Japan (woven fabrics) in the terms per man per year can be stated as follows:

	Consumption per Man per Year		Total National Consumption (*yen*)
	Quantity (*sun*)	Value (*yen*)	
Silk fabrics	82.75	1.92	87,325,307
Silk and cotton mixed fabrics	70.72	0.66	29,842,032
Cotton fabrics	775.18	3.02	137,693,728
Hempen and linen fabrics	.....	6.81	309,519,883
Woolen fabrics and woolen mixtures	30.05	0.79	35,931,759
Total	.....	13.20	600,312,709

Owing to the fact that the unit of measure for *obiji* (sash cloth) is different from that of other fabrics, it is better to state these figures in a separate table as follows:

	Consumption per Man per Year		Total National Consumption	
	Quantity (Piece)[18]	Value (*yen*)	Quantity (Piece)	Value (*yen*)
Obiji in silk fabrics	0.020	0.093	894,666	4,208,772
Obiji in silk and cotton mixed fabrics	0.057	0.095	2,597,404	4,299,592
Obiji in cotton fabrics	0.147	0.019	6,663,709	864,948
Total	0.224	0.206	10,155,779	9,373,312

The fabric most used is cotton; the most valuable materials are hemp and linen. The chief use of the latter, however, is not for clothing. Therefore the cotton fabrics

[18] A piece (*hon*) is about 12 feet in length and 1 foot in width.

form the chief material for Japanese clothing. The consumption of the cotton fabrics per man per year is 31.4 yards, entailing an expenditure of 3.02 *yen*. The materials next in importance are silk fabrics and silk mixtures. The consumption per man per year is 6.37 yards, an expense of 2.58 *yen*. Woolen fabrics and woolen mixtures are only used to a small extent; their consumption per capita per annum is 1.2 yards, their value 0.79 *yen*. The use of woolen fabrics and woolen mixtures is generally limited to a portion of the urban population.

A peculiar piece of Japanese clothing is the *obi*, or sash. It is one of the most important parts of the dress, especially for women. The width of a woman's *obi* is about one foot and its length about twelve feet. As it is used to wind around the dress at the waist, it constitutes the most conspicuous part of the whole dress. Naturally very expensive materials are used for the *obi*. The average consumption per man per year is 0.22 pieces, with a value of 0.21 *yen*. However, the use of the *obi* fabrics is largely limited to women, a woman using on an average nearly a half piece at an expenditure of 40 *sen* per year.[19] The use of the woman's *obi* in Japan corresponds to the use of the hat in America in that it is worn primarily for the sake of fashion or ornament. Not much practical advantage results from the use of the *obi* in spite of its high price.

[19] Men's *obi* are used to some extent; they are about four inches in width and twelve feet in length. But the greatly simplified and inexpensive kinds are in popular use.

CHAPTER X

Improvement of Clothing

There are four kinds of clothing materials: cotton fabrics, hempen and linen fabrics, silk fabrics, and woolen fabrics. Each of them has its special characteristics.[1] For the maintenance of a uniform temperature of the body, which is the chief use of clothing, woolen fabric is the best material, and cotton stands next. For the purpose of ornament, the social taste of the present generation counts silk first in order, and wool next. Woolen fabrics, especially flannel, combine a number of the essential qualities of clothing. They are poor conductors of heat, and therefore retain the body heat instead of allowing it to disperse into the atmosphere. The great porosity and absorptivity of woolen fabrics tend to make easy the escape of the exudations of the skin and the body exhalation.

As compared with cotton, wool is rather expensive, but the cost is merely the expression of market price. Its relative value must be decided after careful consideration of its economic nature in regard to its capacity to satisfy the wants for clothing. It is often claimed that woolen clothes are not satisfactory for wear next to the skin as they

[1] The following table shows the comparative nature of the different materials:

	Cotton	Hempen and Linen	Silk	Woolen
Heat maintenance	strong	very weak	weak	very strong
Porosity	strong	strong	weak	very strong
Moisture absorptivity	weak	very weak	very weak	strong
Moisture evaporability	quick	very quick	slow	very slow
Gaseous and odorous absorptivity	small	small	small	very small
Filth retention	small	small	very small	very great
Irritation to skin	slight	great	very slight	very great

—Yamagata, Ishokujyu, pp. 297–298.

cause irritation. If the quality of the fabric is right, however, this assertion is not true. On the contrary, the value of flannel is great when worn next to the skin; for in addition to the protection it affords from the cold, it is also beneficial during the heat of summer, because through its porosity the perspiration is first absorbed and then allowed to escape. Considering the many important qualities to be found combined in flannel, one comes to the conclusion that woolen fabrics are the best materials for clothing. However, in tropical countries where the maintenance of the body temperature is not essential, cotton fabrics take the place of woolen.

From the standpoints of the fitness of a material for the purpose of ornament and of national self-sufficiency, silk fabrics, which are a product of Japan, would be the best. Nevertheless, for the efficient standard of living an important place cannot be given to silk. The nature of silk makes it an inappropriate fabric for common use in Japan. At present (1913) wool cannot be obtained in Japan, and the importation of woolen fabrics is very large.[2]

However, it has recently been proved that sheep raising in the northern part of Japan is a promising industry, and the import will be much decreased in the next few decades. Wool spinning is now a growing industry; five large factories produce about ten million yards per year. On the other hand, although cotton spinning is one of the most important industries and the consumption of cotton fabrics is very great, there is little hope, owing to geographical conditions, that cotton will ever be cultivated to any extent in

[2] Thirtieth Statistical Report of the Department of Agriculture and Commerce, Japan.

	Quantity (yard)	Value (*yen*)
Woolen cloths and serges	14,496,576	10,479,476
Muslin	158,972	47,542
Flannels	682,214	304,076
Other materials	.....	1,613,818
Total	.....	12,444,912

Japan. Such being the case, from the standpoint of national self-sufficiency woolen fabrics must be claimed as the better material for clothing in Japan. Naturally, therefore, an improvement in clothing would call for a much greater use of woolen fabrics.

In the improvement of clothing the form of dress is an important element. In Japan, in the last few decades men have come to use the European costume to a great extent. At the present time both European and Japanese dress is in common use except among certain classes of people. The European clothing is generally worn as the street and the working dress, and the Japanese clothing as the house and the ceremonial dress. It would be a convenient custom to use two different styles of dress for different occasions if it were not necessary to consider the expense of clothing. Japanese clothes, which can be worn very loosely, are well fitted for a life of ease, but are not fitted for working purposes; European clothes, which can be worn snugly and are unencumbered by any superfluous accessories, are very convenient for active work.

Expenditure for two kinds of clothing, however, is somewhat of a waste and can hardly be justified in an efficient standard of living. For the improvement of clothing, in the future it would be better to use one set of clothing, either European or Japanese, whichever is more practical and advantageous according to the needs of the individual. It must be noted, however, that the custom of wearing European clothing is limited to certain classes of men and children. There is no possibility that the European costume will ever be commonly used by women, and the following argument, therefore, refers chiefly to men's apparel.

In comparing European and Japanese clothing the following points should be observed:

(1) The Japanese dress is not serviceable for active work.

(2) The cutting and the sewing of the Japanese dress require a greater expenditure of time and labor than does the making of the European garment.

(3) The materials used for the Japanese dress—namely,

silk and cotton—are not so satisfactory as wool, which is the main material used for the European dress.

On the other hand, the objections to the European dress are:

(1) It fits too tightly to the body and is not so comfortable as the Japanese dress, especially for those who are unaccustomed to it.

(2) The making at home of the European dress for men is generally impracticable.

(3) To mend the European dress is very difficult, while the Japanese is very easily mended and is commonly remade.

In answer to the first objection one may say that the discomfort would disappear after the people get accustomed to European garments. The second and third objections are quite important at present, but the time will soon come when human labor will be too expensive to allow clothing to be made at home, because in the family the benefits of division of labor cannot be obtained. Several attempts to improve the Japanese dress have been made, but none of them so far have been successful.

Moreover, a comparison of the minimum necessary

MINIMUM EXPENDITURE FOR EUROPEAN AND JAPANESE CLOTHING[3]

	European Clothing[4]	Japanese Clothing[5]	
	Cost per Year	Total Value (*yen*)	Cost per Year (*yen*)
Father	$33.00	186.43	55.33
Mother	23.00	132.06	32.29
Each boy	12.00	38.16	18.42
Each girl	15.00	64.07	23.38
For washing[6]	10.00	.....	.....
Total	$105.00	420.72	129.42

expenditures for clothing shows definitely that European clothing is more economical than Japanese.

It must be noted that while the family income in Chapin's

[3] The value of a Japanese *yen* is about one half of the American dollar, but the purchasing power of the *yen* in Japan is about the same as that of the dollar in America.

[4] Chapin, p. 166.

[5] See p. 76.

[6] The cost of the washing of Japanese clothing is included in the figures for each member of the family.

estimate of the minimum expenditure for clothing is about $800, my corresponding figure is about 600 *yen*. The difference in the number of garments is shown in the following table.

Japanese[7]			European[8]		
Kinds	Number of Pieces	Annual Cost (*yen*)	Kinds	Number of Pieces	Annual Cost (dollar)
I. Father:					
Haori	7	3.37	Overcoats	1	5.00
Wataire	8	3.28	Suits	1	10.00
Awase	5	1.34	Pantaloons	1	2.00
Hitoye	10	4.71	Overalls	2	1.50
Hakama	2	1.66			
		14.36	Total		18.50
European clothing		32.04			
Total		46.40			
II. Mother:					
Haori	8	2.97	Cloaks	1	2.50
Wataire	6	2.53	Dresses of wash goods	2	2.50
Awase	5	1.90	Woolen dresses	1	5.00
Hitoye	12	4.45	Waists	3	1.50
Obi	4	3.21	Petticoats	1	.50
Total		15.06	Hats	1	1.50
			Total		13.50
III. Boy:					
Haori	3	0.76	Overcoats	1	2.50
Wataire	5	1.16	Suits	1	2.50
Awase	4	1.12	Trousers	1	.50
Hitoye	8	1.97	Waists	2	.50
Hakama	2	.59			
European coats	1.5	2.18	Total		6.00
European overcoats	1	1.12			
Total		8.90			
IV. Girl:					
Haori	6	2.49	Cloaks	1	2.00
Wataire	8	3.29	Dresses of wash goods	4	2.00
Awase	5	2.04	Woolen dress	1	1.50
Hitoye	10	2.76	Waists	4	1.00
Obi	3	1.45	Petticoats	2	.50
Overcoats	1	1.51	Hats	2	1.25
Total		13.54	Total		6.25

[7] See pages 77–78.

[8] Chapin, p. 166.

In comparing the cost of cutting and sewing European and Japanese costumes, one finds that the latter have a tendency to be more expensive than the former. This is due to the fact that the Japanese clothing, with some exceptions, is made by hand and by means of a few simple tools, while large numbers of European garments can be turned out rapidly through the use of improved machinery. A ready-made suit passing through the hands of forty different workers indicates an advanced stage in the division of labor that can never be expected in Japanese dressmaking.

For women, however, it is neither practicable nor advisable to adopt the European costume for common use. Some twenty years ago Japanese women tried to wear European clothes, but now the attempt is gradually being abandoned for the following reasons:

(1) The Japanese, generally speaking, have comparatively short legs in proportion to the rest of the body, and on Japanese women the European styles are not becoming.

(2) The inconvenience of the superfluous parts of the Japanese costume is not felt so much by Japanese women, who are not required to do such active work as men.

(3) The style and form of Japanese dress is more becoming to Japanese women, in whose moral training great stress is placed on the virtues of gentleness and meekness.

(4) Women's experience in wearing European dress is almost nil, and it will take a long time to create the habit of its use.

After all these factors are taken into consideration, the following suggestions may be offered for the improvement of women's clothing:

Simplification and Economy.—Japanese custom tends to lavishness and waste in expenditure for clothing. Many different kinds of suits are required to appear properly on different occasions. First, three different weights of garments—*wataire*, *awase*, and *hitoye*—in both *kimono* (coat) and *haori* (overcoat) are needed for the different seasons. Then the garments for each season must include an everyday dress, a visiting dress, and a ceremonial dress.

Yet the use of the ceremonial dress and of the visiting dress is greatly limited. It is often the case that these costly clothes are used only once or twice a year. They are simply hoarded and are used very little. Under these circumstances the natural outcome is that at each social call the woman changes her garment to display her large store of clothing. Such a custom is very expensive and has no practical advantage.

Freedom of Movement and Reasonable Durability of Material.—In olden times, when women of the upper classes could enjoy an easy and inactive life and were under no economic pressure, the sumptuous costume which is now popularly worn by women might have been approved. Such clothes, both in material and in form, are not fitted for an active life; often even a walk or light work for an hour or two causes appreciable wear and tear. At present, as the activity of woman increases, her costume should be improved to fit the needs of her changing modes of living. It should be serviceable and require little attention in the way of mending or remaking.

Grace and Beauty.—Ornament is one of the important objects of clothing. Practicability should not impair graceful and beautiful lines. So far the so-called improved garment which has been proposed from time to time has been rather a failure, because it does not combine aesthetic lines with its practical and economical nature. Of course the conception of beauty is greatly influenced by habit, and improvements are sometimes not appreciated until one becomes familiar with them.

It is highly desirable for the maintenance of an efficient standard of living that specialists shall design an improved garment based on the foregoing principles. For this purpose the following practical suggestions are offered:

Universal Use of Hakama for Women.—Properly the *hakama*, which is a kind of skirt to put over the *kimono*, is used by men only. About fifteen years ago, however, school-girls were initiated into the use of the hakama in order to allow greater freedom of movement, especially

during physical exercises in school. It was a success, and nowadays the *hakama* is in common use among not only school-girls, but teachers, physicians, clerks, and some others of the female sex. The improved style of the *hakama* is not only practical, but is becoming to Japanese women.

Abolition or Simplification of the Obi (sash).—As was stated before, the woman's *obi* is a gorgeous thing. It is about twelve feet long and one foot wide, with a heavy and magnificent lining. Not only is it very expensive, but the fashion of winding it three times tightly around the abdomen is not hygienic. The *obi* is to Japanese clothing what the corset is to European clothing. From the standpoint of the efficient life it is senseless to wind the *obi* so many times about the body and to tie it in a way that makes a large and heavy bundle on the back. The recent popular use of the *hakama* has already encouraged several devices for the simplification or abolition of the *obi*. As a consequence the expenditure for clothing will gradually be cut down in the future. At present the expenditure for the *obi* is one of the greatest items in the cost of clothing. In the minimum expenditure the *obi* costs the mother 3.21 *yen* a year out of her total expenditure of 32.29 *yen* for clothing.

Use of European Shoes.—Clogs and sandals are costly, and, moreover, the price is likely to become higher and higher. A pair of fairly good clogs or sandals costs over two *yen*, and can be used for only a short time. Their manufacture must be by hand, as not much machinery can be used. Their use is limited to Japan only, and the advantage of large-scale industry and the opportunity for a world-wide market can never be obtained. In the minimum expenditure for clothing the cost of clogs and sandals is as shown in the table on the following page.

Machine Work.—The time will soon come when making clothing by hand will be a process too expensive for economic living. The improved garment must be one which can be made by the sewing machine.

As to clothing for children, the European dress is much better from the standpoint of both hygiene and economy.

NUMBER AND COST OF CLOGS AND SANDALS

	Number of Clogs and Sandals	Annual Cost (*yen*)	Per Cent Total Expenditure for Clothing	Total Expenditure for Clothing (*yen*)
Father[9]	4.0	2.70	12	23.29
Mother	5.0	4.20	13	32.29
Each boy[10]	8.6	1.07	5	18.42
Each girl[11]	4.4	2.44	10	23.38
Total	22.0	10.41	10	97.38

Such Japanese garments as the *wataire*, which is very heavy and not adapted to frequent cleaning, should not be used for children. The use of the European dress for children results in some saving in expenditure for their clothing.

In conclusion, it must be remembered that the function of clothing in our lives has a very intimate relation to housing conditions. The improvement of clothing, therefore, must be made in connection with that of housing. The suggestions for improvement made in this chapter may be practicable only when improvement in housing is worked out.

[9] Besides 1.99 for shoes.
[10] Besides 1.69 for shoes.
[11] Besides 1.28 for shoes.

CHAPTER XI

Some Principles of Expenditure for Clothing

From the studies of the expenditure for clothing the following general principles may be deduced.

(1) The expenditure for clothing in the family budget increases with the severity of the climate.

(2) The expenditures for food, clothing, and housing stand in relation to each other in the family budget. Under-consumption in food and improper housing, or either one of them, will cause a greater expenditure for clothing, and vice versa.

(3) The expenditure for clothing has a tendency to increase more rapidly than the income increases.

(4) In the apportionment of expenditure for clothing among the members of the family the father's expenditure for clothing is greater than that of the mother.

The fundamental object to be attained by clothing—namely, the maintenance of a uniform temperature of the body—gives rise to the first two principles. The atmospheric temperature varies according to differences in climate, seasons, and weather conditions. The human body should be so protected as to maintain a mean temperature of 98° F. Good circulation of the blood can be expected only when the body is kept at the proper temperature. When the body is cold, the blood capillaries and vessels contract, and the blood cannot circulate as freely as it should. Naturally in a cold climate a person needs more clothing than in a warm climate, and the expenditure for clothing increases according to the increase of severity in the climate.

Besides clothing, food and housing exert a great influence upon the bodily temperature. Food produces heat by the internal combustion of carbon and oxygen. Housing is similar to clothing in its effect upon the human body.

Thus the three agents are interrelated with reference to the maintenance of body temperature.

Clothing has another important function to perform; namely, to serve as an ornament for the body. Good clothing should satisfy the wants for decency and comfort besides those for mere necessity. It should not only serve its practical purpose, but its material, make, and style should be suitable to the social standing of the individual. It should be pleasing to others as well as to the wearer. Comfort in addition to necessity, and ornament in addition to practicality, are desirable for the advancement of both individual and social life. However, comfort and ornamentation have a close relation to luxury and vanity. Many people, especially women who have not the will power to adjust their wants to their means, are liable to spend more for clothing than can be justified in an efficient standard of living.[1]

The common belief that women spend more for clothing than men is erroneous. The fourth principle—namely, that the father's expenditure for clothing is greater than that of the mother—is verified by a number of studies in family budgets of the poor and middle classes.[2] The reasons for this fact may be enumerated as follows:[3]

[1] See above, p. 17.

[2] AVERAGE EXPENDITURE AND PER CENT OF EXPENDITURE FOR EACH MEMBER OF THE FAMILY (CHAPIN, PP. 174–175).

Income	Total Expenditure for Clothing		Father		Mother		Boy		Girl	
		%		%		%		%		%
$400 to $499 ..	$60.65	13.0	$16.30	27.0	$9.89	16.0	$11.11	18.0	$9.06	15.0
$500 to $599 ..	67.95	12.4	25.26	37.0	14.81	22.0	9.54	14.0	7.88	12.0
$600 to $699 ..	83.48	12.9	28.10	33.6	17.48	21.0	10.68	12.8	10.90	13.0
$700 to $799 ..	98.79	13.4	34.19	34.6	20.23	20.5	12.98	13.2	12.23	12.4
$800 to $899 ..	113.59	14.0	34.10	30.0	22.76	20.0	16.13	14.2	15.96	14.1
$900 to $999 ..	132.34	14.6	40.36	30.5	27.71	21.0	19.29	14.6	16.96	12.8
$1000 to $1099	155.57	15.5	44.02	28.3	32.25	20.8	24.32	15.7	24.79	16.0
$1100 to $1199	163.80	14.9	58.06	35.4	38.49	23.5	19.79	12.0	18.13	11.0
$1200 to $1299	189.57	15.2	56.04	29.5	41.46	22.0	26.45	14.0	20.15	10.6
$1300 to $1399	180.48	13.7	52.35	29.0	41.81	23.0	25.42	14.0	28.05	15.5
$1500 to $1599	260.97	16.8	66.47	25.5	54.34	21.0	31.64	12.0	54.09	20.7

[3] The special reason why this principle holds in regard to the Japanese is stated in Chapter X.

(a) The father, as the chief wage earner of the family, must necessarily have certain kinds of clothing in which to perform his duties. The mother may not be forced to go out, but the father must appear frequently in social and professional activities. Consequently he must dress according to his standard of life. It is true that women crave good clothing much more than men, but the mother who can attend to most of her duties in her inexpensive house dress has no immediate need for such a variety of apparel as has the father.

(b) In the routine of daily work a man's activity is much greater than a woman's. The man's clothing consequently receives the greater wear and tear.

(c) Owing to the fact that the father is the wage earner of the family, he spends his income for clothing much more freely than does the wife. However, this is not true when the family income is divided among the members according to a certain fixed principle.

(d) The inborn skill of woman in the art of ornamentation makes her expenditure for clothing less than it might otherwise be. Yet this reason is very often annulled by the fact that women—especially young women—love beautiful clothing and often indulge themselves in a vain and extravagant manner.

PART IV

COST OF HOUSING

CHAPTER XII

Expenditure for Housing

The investigation of the housing conditions which I undertook in 1914–1915 was limited to the following cities: large cities (population over 200,000), Tokyo, Osaka, Nagoya, and Kobe; small cities (population 30,000–200,000), Tottori, Nagahama, Hakodate, Hiroshima, Matsumoto, and Okayama. The method of inquiry which was used is like that used in the study of clothing, and for the sake of convenience the same schedule was used for both clothing and housing.[1] Out of 863 schedules which were received from the eleven high school teachers in the different cities, 183 were rejected, and 680 were used for the study.[2] The reason that so many schedules were rejected is because special care was given to the selection of representative houses in the respective income groups. However carefully selected, the 680 used cannot be claimed to be the exact representatives of all Japanese houses in the same income classes. But in spite of its imperfection, the inquiry

[1] See Chapter VIII, pages 71, 72.

[2] Number of Housing Schedules Received, Rejected, and Used; Arranged by Income Classes.

Income Classes	Large Cities			Small Cities		
	Rec.	Rej.	Used	Rec.	Rej.	Used
240–259 *yen*	114	8	106	167	11	156
960–1679 (*yen*)	102	43	59	187	45	142
1680–3000 (*yen*)....?....	138	11	127	155	43	112
Total	354	62	292	509	121	388

throws some light on general housing conditions in Japanese cities.

Some of the leading facts as to housing conditions in Japanese cities are as follows:

Size of House.—A typical family of the income group 240–959 *yen* lives in a house of 889 square feet in the small cities, and of 529 square feet in the large cities. A family of 960–1679 *yen* income lives in 1504 square feet in the small cities, and in 1058 square feet in the large cities. A family of 1680–3000 *yen* income lives in 2351 square feet in the small cities, and in 2138 square feet in the large cities. Taking an average of all the income groups, a family lives in a house of 1580 square feet in the small cities, and of 1246 square feet in the large cities. Thus the ratio between the size of the small city house and the large city house is about 100 to 79.

Number of Rooms.—For the family of the income group 240–959 *yen* the number of rooms in a house is 5.5 in the small cities, and 4.1 in the large cities. The fact that the house in the small cities has more rooms is not true in the other income groups. For the income group 960–1679 *yen* it has 7 rooms in the small cities and 7.8 rooms in the large cities, for the income group 1680–3000 *yen* 9.8 rooms in the small cities and 12 rooms in the large cities. On an average of all income groups a house has 7.2 rooms in the small cities, and 8 rooms in the larger cities.

Size of Rooms.—The house in the large cities has on an average more rooms than that in the small cities, in spite of the smaller size of the house. Consequently the size of the room must be smaller in the large cities. For the families of the income group 240–959 *yen*, the average sized room is 5.1 mats (92 square feet) in the small cities, and 4.6 mats (83 square feet) in the large cities.[3] For the income group 960–1679 *yen*, the average is 6.4 mats (115 square feet) in the small cities, and 5 mats (90 square feet) in the large cities. For the income group 1680–3000 *yen*, the

[3] Japanese rooms are generally measured by the number of mats which cover the floor. The regular size of a mat is 3 by 6 feet.

average is 7.2 mats (130 square feet) in the small cities, and 5.7 mats (103 square feet) in the large cities. The average of all the income groups is 6.2 mats (112 square feet) in the small cities, and 5.1 (92 square feet) in the large cities. As a whole, the amount of income, the size of the house, and room size are proportionate to each other.

House Rent.—The rent in the large cities is of course much greater than that in the small cities. For the families of the income group 240–959 *yen* the rent for the average

RENT PER MONTH, NUMBER OF ROOMS, ETC., IN THE SMALL CITIES

I. Income Group, 240–959 yen

	Tottori	Naga-hama	Hako-date	Hiro-shima	Yone-zawa	Matsu-moto	Average
No. of families	28	27	29	23	24	25	.....
Size of house (sq. feet)	1186	774	770	1062	936	626	889
No. of rooms	6.5	5.1	4.8	5.0	5.5	6.2	5.5
Size of room (mats)	4.5	4.9	5.9	4.2	6.1	5.1	5.1
(sq. feet)	81	88	106	76	110	92	92
Rent per month (*yen*)	3.56	4.07	5.20	5.86	4.10	4.45	4.54
Monthly rent per mat	0.12	0.16	0.19	0.28	0.12	0.14	0.18
Family income (*yen*)	789	521	815	746	583	757	702

II. Income Group, 960–1679 yen

	Tottori	Oka-yama	Hako-date	Hiro-shima	Yone-zawa	Matsu-moto	Average
No. of families	25	22	23	31	21	20	.....
Size of house (sq. feet)	2174	1364	1199	1440	1541	1303	1505
No. of rooms	6.9	7.8	5.6	8.0	6.8	6.9	7.0
Size of room (mats)	6.1	6.4	7.8	5.8	7.7	7.3	6.4
(sq. feet)	110	115	140	104	139	131	115
Rent per month (*yen*)	10.83	9.21	10.33	13.56	12.28	7.20	10.57
Monthly rent per mat	0.26	0.18	0.24	0.29	0.24	0.14	0.23
Family income (*yen*)	1202	1178	1099	1490	1407	1107	1247

III. Income Group, 1780–3000 yen

	Tottori	Hiroshima	Matsumoto	Okayama	Average
No. of families	23	28	30	31	.....
Size of house (sq. feet)	2340	1426	2110	3024	2351
No. of rooms	8.6	9.3	7.9	13.3	9.8
Size of room (mats)	8.9	5.7	8.5	5.8	7.2
(sq. feet)	160	103	153	104	130
Rent per month (*yen*)	13.44	16.75	15.20	19.80	16.25
Monthly rent per mat	0.18	0.32	0.22	0.26	0.25
Family income (*yen*)	2290	2550	3524	3258	2906

house (889 square feet) is only 4.54 *yen* per month in the small cities. In the large cities, however, it is 11.11 *yen* in spite of the decrease in house area to 529 square feet. Only 8 per cent of the family income is spent for rent in the small cities, but it increases 22 per cent in the large cities. For the income group 960–1679 *yen* the rent for a house of 1505 square feet is 10.57 *yen* in the small cities, and in the large cities it increases to 18.42 *yen* per month in spite of the decrease to 1073 square feet in house area. Of the family income only 10 per cent is spent for rent in the small cities, while 16 per cent is expended in the large cities. For the income group 1680–3000 *yen* the rent for a house of 2351 square feet is 16.25 *yen* per month in the small cities, but it increases to 44.23 *yen* in the large cities in spite of the decrease to 2138 square feet of house area. This fact means that 7 per cent of the family income is spent for rent in the former, and 19 per cent in the latter. An average of all the income groups shows that rent in the small cities is 10.45 *yen* per month, and 24.60 *yen* in the large cities, and that the house area decreases from 1580 square feet in the small cities to 886 square feet in the large cities. The expenditure, then, for rent in the small cities is 8 per cent, and in the large cities 18 per cent.

As to the general housing conditions in the city of Tokyo, the official statistics published by the city in 1914 show that the total number of houses in the city is 307,966. The area occupied by one-story buildings is 187,824,564 square feet, and that occupied by buildings of two stories and over is 37,981,116 square feet. By the subtraction of the area occupied by the buildings not used for living purposes, 296,888 houses with an area of 204,494,436 square feet was used for residential purposes, that is, 488,025. The average area occupied by an average family of 3.9 members is 418 square feet. Fifty-five per cent of the total number of houses are one story and 45 per cent two stories and over; out of 45 per cent of the latter only 2 per cent are houses of three stories and over. Of these houses, 91 per cent are built of wood.

RENT PER MONTH, NUMBER OF ROOMS, ETC., IN THE LARGE CITIES

	Income Group, 240–959 *yen*				Income Group, 960–1,679 (*yen*)		
	Tokyo	Nagoya	Kobe	Average	Nagoya	Kobe	Average
No. of families	38	32	36	(114)	32	27	.....
Size of house (sq. feet)	594	500	490	529	1123	1019	1073
No. of rooms	3.6	4.6	4.0	4.1	7.2	8.3	7.8
Size of room (mats)	5.3	4.6	3.8	4.6	5.1	4.8	5.0
(sq. feet)	95	83	68	83	92	86	90
Rent per month (*yen*)	13.86	9.35	10.12	11.11	15.40	21.48	18.42
Monthly rent per mat	0.73	0.44	0.53	0.57	0.42	0.54	0.48
Family income (*yen*)	572	579	654	602	1346	1345	1346

	Income Group, 1,780–3,000 *yen*				
	Tokyo	Osaka	Nagoya	Kobe	Average
No. of families	28	35	27	37	.....
Size of house (sq. feet)	2128	2419	2059	1940	2138
No. of rooms	12.1	12.9	11.1	11.7	12.0
Size of room (mats)	6.0	5.8	6.2	4.6	5.7
(sq. feet)	108	104	112	83	103
Rent per month (*yen*)	50.78	49.97	37.55	38.83	44.28
Monthly rent per mat	0.70	0.63	0.35	0.72	0.60
Family income (*yen*)	2882	2867	3010	2665	2856

SUMMARY OF RENT PER MONTH, NUMBER OF ROOMS, ETC., IN THE DIFFERENT INCOME GROUPS

	Income Group, 240–959 *yen*			Income Group, 960–1,679 *yen*			Income Group, 1,780–3,000 *yen*			Average of All Groups
	Small Cities	Large Cities	Average	Small Cities	Large Cities	Average	Small Cities	Large Cities	Average	
No. of families	156	114	.....	120	59	.....	112	127	.....	.....
Size of house (sq. feet)	889	529	709	1505	1073	1290	2351	2138	2245	1415
No. of rooms	5.5	4.1	4.8	7.0	7.8	7.4	9.8	12.0	10.9	7.6
Size of room (mats)	5.1	4.6	4.9	6.4	5.0	5.7	7.2	5.7	6.5	5.7
(sq. feet)	92	83	88	115	90	103	130	103	117	103
Rent per month (*yen*)	4.54	11.11	7.83	10.57	18.42	14.50	16.25	44.28	30.27	17.53
Monthly rent per mat	0.18	0.57	0.38	0.23	0.48	0.36	0.25	0.60	0.43	0.38
Family income (*yen*)	702	602	652	1247	1346	1296	2906	2856	2881	1610

A valuable study of the housing of the poorest classes in the tenement districts of Tokyo was made by the Department of Interior Affairs.[4] The housing of 3031 families

[4] The investigation was carried on in 1911–1912 in the typical poor section of Tokyo in the Asakusa and Shitaya districts.

was investigated; 73 per cent of these families live in one room, 25 per cent in two rooms, and 2 per cent in three rooms and over. The commonest size of the rooms is 4.5 mats, or 81 square feet. When a family of 3.9 persons live in a room of 81 square feet it means that each person occupies the small space of 21 square feet. This great overcrowding is the prevailing condition among the very poor. The sum of 1.40 to 2 *yen* is commonly the rent paid by families with an income of less than 10 *yen* per month, and 3 to 4 *yen* is paid by families with an income of 20 to 25 *yen*.

NUMBER OF ROOMS OCCUPIED BY THE POOREST CLASSES IN THE TENEMENT DISTRICTS OF TOKYO

Streets	No. of Families Occupying One Room	No. of Families Occupying Two Rooms	No. of Families Occupying Three Rooms	No. of Families Occupying More than Three Rooms	Total
Kanasugishita St.....	656	102	4	2	
Ryusenji St.....	493	193	13	2	
Iriya St.....	230	105	—	—	
Mannen St.....	460	142	17	17	
Yamabushi St.....	288	198	11	—	
Jinkichi St.....	31	13	—	—	
Niiya St.....	47	7	—	—	
Total.....	2205	760	45	21	3031

RENT PER MONTH AMONG THE POOREST CLASSES IN THE TENEMENT DISTRICTS OF TOKYO

Amount of Rent per Month (*yen*)	No. of Families	Amount of Rent per Month (*yen*)	No. of Families
1.00–1.20	15	2.80–3.00	6
1.20–1.40	110	3.00–3.20	6
1.40–1.60	235	3.20–3.40	27
1.60–1.80	94	3.40–3.60	14
1.80–2.00	201	3.60–3.80	—
2.00–2.20	52	3.80–4.00	2
2.20–2.40	30	4.00–4.20	—
2.40–2.60	137	4.20–4.40	7
2.60–2.80	67	Unknown	22
		Total.....	1025

From the results of the study some principles of expenditure for housing may be deduced. However, it must be noted that the fundamental object to be attained by housing is almost the same as that of clothing. The principles of expenditure for housing are therefore largely similar to those for expenditure for clothing.

(1) The expenditure for housing in the family budget increases with the severity of the climate.

(2) The expenditures for food, clothing, and housing stand in correlation to each other in the family budget.

(3) The expenditure for housing tends to increase rapidly as the income increases.

(4) The expenditure for housing in the family budget is much greater in the city than in the country; also, the larger the city the greater the expenditure.

(5) The rate of rent per month paid by poor families is greater than that charged families of the middle and high classes.

An interpretation of most of these facts is not necessary because it is self-evident in connection with the statements which were given under the heading of clothing, and which will be given in the following chapter. As to the last principle, however, the reasons may be summarized as follows:

(a) Usually the members of the family in the small income group are overcrowded in a small house. They are often careless in the use of the building. The natural consequence is that the house is more or less liable to become damaged.

(b) Houses occupied by poor families are in great danger of being destroyed by fires due to carelessness.

(c) The collection of rent from the poor families is a difficult and expensive task.

(d) The poor people move frequently and the landlord loses the rent during the unoccupied intervals.

Thus the expenditure for housing is comparatively heavier for the poor people, and their housing conditions will get worse and worse unless measures are taken for improvement.

CHAPTER XIII

Improvement of Housing

The expenditure for housing must cover all the requirements in the fulfilment of the proper functions of a house. For the maintenance of the efficient standard of living the following conditions must be observed:

(1) The house should be durable and large enough to accommodate the family comfortably.

(2) The house should have ample facilities for a good water supply and the sanitary disposal of waste materials.

(3) The house should have good ventilation and plenty of sunlight.

(4) The building plan should be adapted to the needs of economic and social life.

(5) The house should be located in a place both healthful and convenient.

As is the case with clothing, a good house must satisfy the wants of decency and comfort besides those of mere necessity. However, the temptation to indulge in luxurious expenditure for housing is very strong, because though "your friend may not see the holes in your socks, you can not deceive him so easily if your window panes are broken. So pride encourages every man to hire the best house he can afford."[1]

Just as there are minimum expenditures for food and clothing, so also must there be a lower limit in the expenditure for housing. But that limit is very hard to ascertain. The only possible way to determine it is to work with the results of the physiological experiments on the space necessary for human living. It is calculated that a man inspires from 16 to 18 cubic feet of air in an hour, and at the same time he expires from 0.5 to 0.7 cubic feet of carbonic acid

[1] Streightoff, p. 70.

gas. Air which contains more than six ten-thousandths of carbonic acid gas is injurious to life. Based upon these figures, the minimum space which is physiologically necessary for one man has been estimated at 600 cubic feet for an ordinary living room, 1000 cubic feet for dormitories or other buildings for group life, and 1300 cubic feet for hospitals or other buildings where fresh air is especially needed.

The rooms most commonly used in Japan may be divided into two kinds: the six-mat room, which is 9 by 12 feet, or 108 square feet, and the eight-mat room, which is 12 by 12 feet, or 144 square feet. The usual height of the ceiling from the floor is 8½ feet. Thus a six-mat room, which has a spatial area of 918 cubic feet, is large enough for one and a half persons, and an eight-mat room, which contains 1214 cubic feet, is large enough for two persons. This means that 72 square feet of floor space are necessary for one person. In the ordinary building plan of the Japanese house, on account of the large amount of space devoted to porches, the room area of a house occupies about fifty per cent of the whole house area. Therefore the house area which is necessary for an adult is 144 square feet. In the following table are noted the house areas required for families of from two to five adult members.

A family of two adult members	288 sq. feet.
A family of three adult members	432 sq. feet.
A family of four adult members	576 sq. feet.
A family of five adult members	720 sq. feet.

Boys over 18 and girls over 16 years of age will be counted as adults. Among younger boys and girls those over 14 years will be considered as three quarters of an adult, children from 5 to 14 as one half, and children under 5 as one quarter.[2]

Owing to the fact that Japanese houses are built more openly and lightly than American houses, it would seem that less space would be sufficient in Japanese houses.

[2] Bowley and Burnett-Hurst, Livelihood and Poverty, p. 22.

However, this is not always true because the generation of carbonic acid gas from the imperfect heating and lighting system is greater, and the custom of sleeping on the floor makes the sleeper more susceptible to the effect of bad gases. Therefore the minimum house dimension for an average family of two adults and three children must be at least 500 square feet, or a house of three small rooms (two six-mat rooms and one four-and-hàlf-mat room), besides the kitchen and other bare floor space.[3]

Sunlight is another element which is indispensable in housing. In England one square foot of window area is considered necessary for 125 square feet of living room. Under the school-building regulations in Japan the windows of class rooms should occupy a space equal to one fifth to one quarter of the floor area. Because of the fact that Japanese houses are generally one or two story buildings of the bungalow type, most rooms have direct access to outside light. Though the dark room and overcrowding have always been the two leading housing problems in Europe and America, in Japan the dark room problem is not so great. Overcrowding, however, is serious in large cities. On account of the increase of the urban population year by year, the housing conditions in poor sections are getting worse, and the improvement of housing is now very necessary for the maintenance of an efficient standard of living.

Japanese houses, generally speaking, are divided into four different types.

The Japanese Type.—The Japanese type of building, which has grown out of the influence of ancient Korean, Indian, and Persian architectures, has many attractive features in large edifices such as palaces, temples, and so on. This type, however, is not so suitable for ordinary dwelling purposes.

The European Type.—The European type of building is now widely used for public offices, schools, barracks, and other modern buildings. Yet, for the ordinary family life

[3] The percentage of the room area to the whole house area is greater in the smaller houses.

of the Japanese, it is not considered desirable unless some improvements are made in it.

Mixed Type of the Japanese and the European.—In the present age, when the Japanese carry on two different modes of living, it is quite natural and convenient to have Japanese and European rooms built side by side. For example most families in the middle and high classes provide guest rooms in two different styles: the Japanese room for the visitors wearing the Japanese costume, and the European room with chairs for those wearing the European costume. However convenient this practice may be, the fact that it means a double expenditure in many ways makes it undesirable from the standpoint of economy. Moreover it is difficult to get harmonious architecture in building together rooms of entirely different styles.

United Type of the Japanese and the European.—The united type of building is the one which ought to be adopted for improved housing. Instead of putting European and Japanese types together side by side without much consideration for cost or harmony of architecture, the harmonious union of the Japanese and the European is the main object of this new type. The adoption of the superior points and the rejection of the inferior in both types may do much toward creating an ideal home from the standpoint of efficient living.

Some points to be adopted from the Japanese, among others, are the Japanese characteristic open style in order to give a pleasing sensation of openness and good ventilation, and the use of such unique parts of the building as the *tokonoma*, the *oshiire*, the *kabe*, and so on. The points to be adopted from the European, among others, are the use of glass window panes in order to get sufficient sunlight, and the use of hard floors, tables, chairs, and bedsteads, and the use of the European doors together with the large Japanese screen (*fusuma*). The extent to which these superior points of both types are adopted must differ according to varying circumstances.

For the general improvement of Japanese houses the following suggestions may be made:

Encouragement of Cooperative Ways of Living.—This should be carried out especially in poor sections. The cooperative heating system (in the cold districts) and the cooperative kitchen in apartments and tenement houses, and the common use of yard, garden, bath, kitchen, washing place, and so on, would be beneficial if rightly managed.

Utilization of Space between Ceiling and Roof, and of Ground under First Floor.—The majority of cottages occupied by the poor and middle classes are one or two storied dwellings without cellars or attics. A more economical use of building space is now becoming necessary.

Improvement in Architecture.—The Japanese house in the beginning is not costly, but it needs repair frequently because of its more or less fragile structure. Moreover the devastation by fire is rather great in Japan. Housing is therefore comparatively expensive. The union type of house should be built much more strongly and uninflammable materials should be used as much as possible. Improvements of this kind in architecture are more expensive in the beginning, but are more economical in the long run.

Abolition of Tatami (Straw Matting).—The use of *tatami* is unhygienic and uneconomic. Not only is it difficult to clean, but a change of the surface mat is necessary almost every year.

Improvement of Building Plans.—Practicality or utility more than a showy appearance should be the principle followed in drawing up building plans. For example, though the sitting room and the kitchen are used constantly, they occupy a place much inferior to that of the parlor and the front vestibule, which are little used.

PART V

COST OF LIVING AS A WHOLE

CHAPTER XIV

Cost of Living among Tenant Farmers

In the preceding chapters the inquiries were chiefly made concerning three fundamental items of the cost of living. With the aim of obtaining reliable data of the cost of living as a whole, I undertook an investigation of the family budgets of the tenant farmers of the lowest class. The purpose in selecting this class of people is that the results of the inquiry may throw some light upon the conception of the minimum cost of living and the standard of living among the class of people who form the greatest part of the population. It is desirable, also, to get reliable data from their simple mode of living, since life in the city is far too complicated to offer any information as satisfactory as that which is obtained in the rural districts.

In 1913, 250 families were visited by me and eight assistants. After careful examination, however, only 217 schedules have been used, the rest being rejected as unsatisfactory because of their inaccuracy and incompleteness. The districts and the families investigated were selected as being representative of general economic conditions. Each family chosen was self-supporting and consisted of two parents and from two to four children under fifteen.[1] The cost of the investigation, which was paid by the Tohoku Imperial University, Sapporo, was $115.[2] This sum does

[1] For the selection of families the College Farm Report of 1913, which contains a minute directory of the tenants, was carefully consulted.

[2] The expense was as follows:

Traveling expenses	$ 65
Printing of schedules and stationery	23
Services of two assistants	25
Sundries	2
Total	$115

not include remuneration for the services of the investigators, whose regular salaries are paid by the Japanese government.

The schedules were collected from tenants of the College Farms situated in four different regions of Hokkaido (the Northern Island of Japan).[3] Farming in these regions is conducted much more extensively than on the main island of Japan. But because the climate is very severe and the farming season much shorter, the economic standing of small farmers in the main island and in Hokkaido is about similar. Corn, wheat, beans, oats, and potatoes are the principal crops. There are no dairies on these farms. The average area of each piece of land cultivated by a tenant's family is 12.6 acres. Owing to the fact that the farms are owned by the government for scientific purposes, the rent charged for these farms is very much less than the regular rate. As a consequence the value of the right of tenancy is so high that it is almost equal to the real land value. The average total capital of the families investigated is 1330 *yen*. This sum includes all forms of fixed capital: the right of tenancy, which forms 57 per cent of the capital, or 751 *yen;* the buildings, which is 15 per cent, or 196 *yen;* clothing, 12 per cent, or 163 *yen;* and horses, 8 per cent, or 108 *yen*. The rest of the forms of capital are all valued at less than 5 per cent. The distribution of capital may be summarized as follows:

AVERAGE CAPITAL

Forms of Capital	Value (*yen*)	Per Cent of Capital	Remarks
Real estate (right of tenancy)	750.82	57	Area of land, 12.6 acres
Buildings	195.95	15	2.4 buildings with area of 1159 sq. feet
Clothing	162.82	12	
Horses	108.48	8	Number of horses, 1.23
Furniture	58.47	4	
Farm implements	51.23	3	
Chickens	1.15	1	Number of chickens, 2.58
Hogs	0.87		Number of hogs, 0.12
Total	1329.79	100	

[3] The four regions are Misomaye, Kakuta, Furano, and Yamabe.

The average income received by each family is 589 *yen*. Seventy-six per cent of the sum comes from crops, and 11 per cent from labor done for others. The labor each family expends on its own farm is not calculated in this income. The remaining sources of income form less than 5 per cent of the whole.

DISTRIBUTION OF INCOME

Form of Income	Value (*yen*)	Per Cent	Remarks
Crops	451.66	76	Crops sold, 289.30 *yen*
Labor	61.33	11	Work on other farms
Manures produced on farm	24.50	4	Human waste, 556 gals. (40 gals. at 50 *sen*); horse manure, 28,945 lbs. at 50 *sen*
Horses	20.09	4	0.24 horses sold
Chickens	0.96		
Hogs	0.85		0.13 hogs sold
Sundries	29.64	5	
Total	589.03	100	

The expenditure of each family is 519.66 *yen*. This sum includes the farming expenditure, 216.32 *yen*, and the living expenditure, 303.34 *yen;* that is, 58 per cent of the total expenditure is consumed in the cost of living. Then, nearly 60 per cent of the cost of living is expended for food, of which 55 per cent is produced on the farm and 45 per cent is bought from stores. The next largest item is clothing, which forms 9.3 per cent of the expenditure. The cost of housing is only 2.6 per cent in spite of the fact that the expense for a sinking fund is included. Each family owns its home, but the housing conditions are very poor. Recreation, 6.6 per cent of the expenditure, is the third great item. This percentage is spent mostly for smoking and for pilgrimages.[4] The fourth item is lighting and heating, which comprises 5.9 per cent of the whole. The lighting is very inexpensive, but the heating costs a great deal, as

[4] A pilgrimage from one Buddhist temple to another in the different parts of the country during the winter months is a fad among ignorant older people.

the regions are cold. The wood which is gathered from the farm lands is the chief supply of fuel at present, but the time will soon come when the supply must be obtained from

DISTRIBUTION OF EXPENDITURE

Cost of farming	216.324 *yen*[5]
Cost of living	303.339 *yen*
Total	519.663 *yen*

other sources. The fuel problem is therefore becoming a matter of great concern in the rural districts. The expenditure for medical aid, 5 per cent, is comparatively high, chiefly due to the fact that the standard of living is too low.

COST OF LIVING

Items	Amount (*yen*)	Per Cent	Items	Amount (*yen*)	Per Cent
Food[6]	181.077	59.7	Recreation	20.020	6.6
Clothing	28.302	9.3	Charity and religion	6.924	2.3
Housing	7.962	2.6	Health	14.748	4.8
Lighting and heating	18.060	5.9	Education	4.258	1.4
Taxes and fees	11.862	3.9	Saving	1.186	0.4
Society	6.304	2.1	Other items	2.636	0.9
			Total	303.339	100

For the investigation of food consumption forty representative families—ten families in each of four regions—were selected. A blank note-book containing thirty pages was given to each family whose diet during thirty days was to be studied. The housewives or the husbands were asked to fill out the blanks every day under the supervision of the farm inspectors of the college, to whom I previously gave instructions as to the method of inquiry. Each page of the book was for a detailed account of the food consumed in a day. The kinds and quality of food bought or furnished by the farm, the price paid, the menu, and the method of cooking were to be stated in this account. In addition a

[5] Rent of land, 29.05 *yen;* sinking fund, 54.16 *yen,* implements and furniture, 10.30 *yen.* Furniture is included in the cost of farming for the sake of convenience in calculation.

[6] The value of the food produced on the farm is 117.70 *yen.*

report of the chief work engaged in and of the weather conditions of the day was requested in order that the relation of these things to food consumption might be ascertained. Although the fact cannot be shown by statistics, it has been clearly proved that food in greater quantity and of a simpler nature is generally consumed on fair days when a great deal of hard work has been accomplished than on bad days. A smaller quantity of more varied food is consumed on rainy days when light or indoor work is done.

The menu of the daily diet is extremely simple and monotonous. Almost the same dishes are used throughout the year.[7] The only change worthy of note is the variation in vegetables according to the seasons. Naked barley to the amount of 3.45 *go* (0.164 gallons), mixed with 1.95 *go* (0.094 gallons) of rice, is consumed on the average by each adult in a day. The quantity of rice consumed is a little over one half the quantity of naked barley, but it is much more expensive than barley. Sixty-one and nine tenths per cent of the food expenditure is for the principal food and 38.1 per cent for the subordinate food. Of the former, 34.7 per cent is for rice and 27.2 per cent for naked barley. The subordinate food consists of animal and plant food. However, only 8 per cent, or 1 *sen*, is spent for animal food (fish). This food is much more expensive than are vegetables, and therefore the quantity consumed is naturally very small. The most important kind of subordinate food is the vegetable. Though a great quantity of vegetables is consumed the expenditure for them amounts only to 8 per cent of the total expenditure for food because of their cheapness in farming districts. Then come in order *miso*, 5.8 per cent; pickles 4.9 per cent; liquor (*saké*), 0.6 per cent; *shoyu*, 0.2 per cent; and sugar, 0.2 per cent. The total cost of food per man per day is 12.1 *sen*. The same diet would cost 14.3 *sen* in Tokyo. The details of this food investigation may be found in Chapter V.

The foregoing results secured from a limited number of

[7] Rice and naked barley for the principal food, and *miso* soup or stew with plenty of vegetables for the subordinate food.

families in a limited region are probably not so accurate as could be desired. The fact, however, that the life of the tenant family is very simple, and that not much variation can be found in the standard of living among the small farmers of Japan, justifies the foregoing as fairly reliable results.

In comparing these results with other investigations, much similarity is found notwithstanding differences in localities, periods of time, and methods of inquiry. The statistics obtained in Shizuoka Prefecture show that the average small farmer's family of 6.3 members has an income of 816.75 *yen;* that the total cost of living is 334.9 *yen*, which constitutes 42 per cent of the receipts; the expenditure for food is 194.45 *yen*, which is 56 per cent of the cost of living.[8] The average cost of food in six farming regions in Aichi Prefecture is 213.68 *yen*, which is 63 per cent of the cost of living.[9] In the Island of Oki an average tenant family consisting of two adults and two children spend 111.76 *yen*, that is, 69 per cent of the cost of living, and the average land-owning farmer's family, consisting of 5 adults and 2 children, spends 201.55 *yen* for food, which is 54 per cent of the cost of living.[10] The Agricultural Association of Japan estimates that the average family of the Japanese farmers spends 157 *yen* for food, which is 40 per cent of the cost of living. On the whole the cost of living for the small farmer's family is about 300 *yen*, 40 to 60 per cent of which sum is expended for food.

[8] Data secured in Shiratori and nine other farming districts in the Prefecture by the Agricultural Association of the Prefecture.

[9] Yamazaki, Nokano Keizai, p. 80.

[10] Journal of the Agricultural Association of Japan, No. 387 (1914).

CHAPTER XV

Minimum Cost of Living

The cost of living varies greatly according to differences in individual, social, and territorial conditions.[1] In order to get a general knowledge of such a subject, a method of computation which is more or less arbitrary is often more successful than a method which depends merely upon rigid statistical figures. However, the computation should be established as far as possible upon precise data. The results of the investigation already described and the considerations suggested in the preceding chapters are the foundation upon which I shall now attempt to compute the minimum cost of living in Japan.

In approaching the subject it must be remembered that "the term, the standard of life, is here taken to mean the standard of activities adjusted to wants";[2] that wants were classified as necessity, decency, comfort, and luxury wants; and that, in its scientific interpretation, there are two standards of living, the absolute standard and the relative standard.[3] The mode and scale of activities adjusted to the necessity wants was called the absolute standard of living.[4] The minimum cost for the maintenance of this lowest possible standard of living will be called the minimum cost of mere living, or, in brief, the cost of existence. The mode and scale of activities adjusted to the wants for necessity, decency, and comfort in any particular society at any time or in any place was differentiated from the relative standard of living by the term "the efficient standard of living."[5] The minimum cost for the maintenance of

[1] See page 14.
[2] See page 15.
[3] See pages 16–17.
[4] See page 16.
[5] See page 18.

this standard will be called the minimum cost of efficient living, or, in brief, the minimum cost of living.

For the computation of these two kinds of cost the minimum costs of food, clothing, and housing should first be worked out; the total cost of living must then be deduced from these three fundamental items.

Minimum Cost of Food.—In the study of the prisoner's diet the cost per capita per diem was 8.25 *sen* according to local prices, and 10.38 *sen* according to Tokyo prices. In the study of the diet of a family supported by a woman day-laborer living in "primary" poverty it was 11 *sen* according to local prices, and 12.1 *sen* according to Tokyo prices. The quality of these diets is extremely simple, 86.5 per cent of the former and 84.6 per cent of the latter consisting of the principal food, that is, rice and naked barley.[6] The diet in its quantity and quality is not physiologically sufficient to do more than barely sustain life. The average of these two diets, 10 *sen* according to local prices and 11 *sen* according to Tokyo prices, would be the minimum cost of diet for mere living, or, in other words, the minimum food cost of existence.

In the study of the tenant farmer's diet the cost per capita per diem was 12.13 *sen* according to local prices and 14.30 *sen* according to Tokyo prices.[7] This diet may be sufficient in quantity, but its quality cannot be scientifically approved. Of the cost, 61.9 per cent is for the principal food, and very little animal nutrient is taken. However, this sum when used in the most economical way may be able to provide a fairly well balanced and sufficient diet.

The study of the sailor's and soldier's diet shows the cost of diet per capita per diem to be 39.3 *sen* in the navy, and 34.39 *sen* in the army, both according to Tokyo prices, 25.2 per cent of the cost in the navy and 29.1 per cent of the cost in the army being used for the principal food, namely, rice, naked barley, and bread. More than half of the cost

[6] See page 35.
[7] See page 31.

is for animal food. The quantity is ample and the quality fair, but not much attention to economy in selection and cooking of food materials can be expected in a diet which is prepared in such great quantities as it is in the navy and the army. The ordinary family cannot purchase food materials in great quantities, but experienced housewives can utilize an inexpensive diet and at the same time obtain the essential nutritive values. The average cost of the soldier's diet, 37 *sen*, which is about the same as the cost of the standard diet suggested by the Japanese Bureau of Hygiene, would be the cost of a diet for the middle class of people who do not pay much attention to the economy of food.[8]

In the study of the standard diet of a middle class family the cost per capita per diem was 25.9 *sen* according to small-city prices and 30.5 *sen* according to Tokyo prices.[9] As was stated in Chapter IV, the purpose of that study was to suggest a diet which can be approved from both the theoretical and the practical standpoint.[10] Accordingly 26 *sen* and 30 *sen* in the small and large cities respectively would be fair standards for efficient food expenditure. However, it must be remembered that in this standard diet animal protein forms about one third of the entire protein, and the Japanese dietary habit and custom have been to obtain protein from plant food to a much greater extent than is suggested by Atwater and the Japanese Bureau of Hygiene. Dietary experimentation shows that the moderate substitution of plant food for animal food may be able to reduce the cost nearly 10 per cent without any reduction of fuel value in the diet. Such a diet is not unsatisfactory, especially for those whose labor is physical rather than mental. Taking all these facts into consideration, 21 to 29 *sen* with an average of 25 *sen*, and 24 to 32 *sen* with an average of 28 *sen* in the small and large cities respectively would be the minimum cost of diet for efficient living. The

[8] See pages 36–37.
[9] See pages 38–39.
[10] See page 38.

monthly cost of food for a normal family of 3.3 adult units in the small cities is from 21 to 29 *yen* with an average of 25 *yen*, and in the large cities from 24 to 32 *yen* with an average of 28 *yen*.

THE MINIMUM COST OF DIET

	Small Cities		Large Cities	
	Per Man per Day (*sen*)	Per Family[11] per Month (*yen*)	Per Man per Day (*sen*)	Per Family per Month (*yen*)
Prisoner	8.3	—	10.4	—
Woman laborer	10.0	—	12.1	—
Minimum cost of existence	10	10	11	11
Tenant farmer ("secondary" poverty)	12.1	12	14.3	14
Soldier (Navy)	—	—	39.3	—
Soldier (Army)	—	—	34.4	—
Standard diet (Bureau of Hygiene)	—	—	36.5	—
Standard diet (improved)	25.9	—	30.5	—
Minimum cost of living	25 (21–29)	25 (21–29)	28 (24–32)	28 (24–32)

Minimum Cost of Clothing.—In the study of clothing the yearly cost in the small income group (240 to 959 *yen*) in the large cities was for the father 55 *yen*, for the mother 32 *yen*, for the boy 18 *yen*, and for the girl 23 *yen*, making a total of 129 *yen*. In the small cities it was for the father 46 *yen*, for the mother 33 *yen*, for the boy 23 *yen*, and for the girl 25 *yen*, making a total of 127 *yen*.[12] The cost of clothing is nearly the same in the large cities as it is in the small cities. The quality, quantity, and kinds of clothing in both instances are certainly sufficient, if not indeed over-sufficient. Considering the fact that Japanese habit and custom make for some waste in clothing, it would not be difficult to cut down the father's expenditure by 24 *yen* at least (that is, the average cost of his Japanese clothing), and the rest of the family's expenditure by 10 per cent if the

[11] Family unit 3.3.
[12] See pages, 76, 92.

money were rightly expended for the improved costume suggested in Chapter X. Then 60 to 132 *yen* with an average of 96 *yen* would be the minimum cost of clothing for efficient living both in the large and in the small cities.

The minimum absolute cost for clothing is hard to compute because there are great differences in natural and social conditions. The extremely low cost of clothing, however, for the tenant farmer (28 *yen*) and for the woman laborer (3 *yen*) will furnish a clue to the minimum cost of clothing for existence; 3 to 20 *yen* with an average of 12 *yen* a year would probably be the necessary expenditure.[13] The minimum cost of clothing for a normal family for a year, then, will be summarized as follows:

	Minimum (*yen*)	Maximum (*yen*)	Average (*yen*)
Absolute standard (minimum cost of existence)	3	20	12
Efficient standard (minimum cost of living)	60	132	96

Minimum Cost of Housing.—The minimum space for housing which is physiologically necessary for a normal family is 500 square feet.[14] Such a house usually consists of two rooms 9 by 12 feet and 9 by 9 feet, besides a small kitchen and a little other bare floor space. In the study of housing in the small income group the size of the house was found to be 529 square feet in the large cities and 889 square feet in the small cities; the number of rooms 4.1 and 5.5, and the average size of a room 83 square feet and 92 square feet respectively. The monthly rent of this house was 11.11 *yen* and 4.54 *yen* respectively.[15] If rightly arranged and managed, the conditions of these houses might not be very inadequate, and 8 to 20 *yen* with an average of 14 *yen* in the large cities and 5 to 15 *yen* with an average of 10 *yen* in the small cities would be the minimum housing cost for efficient living.

[13] Page 130.
[14] Page 123.
[15] Pages 117, 119.

The studies of poverty in Tokyo and Sapporo (woman laborer) must be the basis for an estimate of the minimum housing expenditure for existence.[16] The rent in the farming districts is too low to be used for cities. Considering the fact that the city authorities in Tokyo set 3 *yen* as the monthly rent for the poverty line, the minimum cost of housing for existence would be 0.50 to 2.50 *yen* with an average of 1.50 *yen* in the small cities, and 0.75 to 3.25 *yen* with an average of 2 *yen* in the large cities. These houses have an insufficient spatial area and are in poor repair, yet for the purpose of mere existence they are habitable, for life is not affected so seriously by bad housing as by poor nourishment.

The minimum monthly cost of housing may then be summarized as follows:

	Small Cities			Large Cities		
	Minimum (*yen*)	Maximum (*yen*)	Average (*yen*)	Minimum (*yen*)	Maximum (*yen*)	Average (*yen*)
Absolute standard (minimum cost of existence)	0.50	2.50	1.50	0.75	3.25	2.00
Efficient standard (minimum cost of living)	5.00	15.00	10.00	8.00	20.00	14.00

In summing up, the tables on page 139 will show the minimum cost of the three fundamental items in the cost of living.

The rest of the items—namely, lighting and heating, education, society, religion, health, recreation, saving, and sundries—should also be considered to get the sum total of the cost of living. However, a fixed standard of these expenditures can hardly be established, owing to their exceedingly variable nature. They are also more or less inconsiderable in comparison with the three fundamental items. The best indices of the cost of living, therefore, are the percentages spent for food, clothing, and housing.

In considering food expenditure one finds Engel's laws

[16] Page 120.

MINIMUM COST OF THE THREE FUNDAMENTAL ITEMS IN THE COST OF LIVING FOR A NORMAL FAMILY

I. *Standard of Existence*

	Small Cities			Large Cities		
	Minimum (*yen*)	Maximum (*yen*)	Average (*yen*)	Minimum (*yen*)	Maximum (*yen*)	Average (*yen*)
Food:						
Monthly.....	7	13	10	8	14	11
Yearly.....	84	156	120	96	168	132
Clothing:						
Monthly.....	0.25	1.80	1.00	0.25	1.80	1.00
Yearly.....	3	20	12	3	20	12
Housing:						
Monthly.....	0.50	2.50	1.50	0.75	3.25	2.00
Yearly.....	6	30	18	9	39	24
Total:						
Monthly.....	7.75	17.30	12.50	9	19.05	14
Yearly.....	93	206	150	108	227	168

II. *Standard of Living*

	Small Cities			Large Cities		
	Minimum (*yen*)	Maximum (*yen*)	Average (*yen*)	Minimum (*yen*)	Maximum (*yen*)	Average (*yen*)
Food:						
Monthly.....	21	29	25	24	32	28
Yearly.....	252	348	300	288	384	336
Clothing:						
Monthly.....	5	11	8	5	11	8
Yearly.....	60	132	96	60	132	96
Housing:						
Monthly.....	5	15	10	8	20	14
Yearly.....	60	180	120	96	240	168
Total:						
Monthly.....	31	55	43	37	63	50
Yearly.....	372	660	516	444	756	600

to be as true in Japan as they are in other countries: (1) The smaller the income the greater the proportionate expenditure for food; (2) the proportion expended for food is a sure index of the material prosperity of a people. Both the woman laborer's family and the tenant farmer's family

expend 60 per cent for food. Families of the Ainu race and other primitive families often spend as much as 90 per cent.[17] The proportion expended for food diminishes with the increase in size of the city, for in the large cities the proportion expended for rent and a few other items is much greater than in the small cities. Studies made in other countries show that the percentage for food is generally 40 to 70 in the small income groups.[18] Taking all these facts into consideration, 65 per cent would be about the average proportion expended for food by families in "primary poverty"; or, in other words, 65 per cent of the income must be spent for food in the maintenance of existence.

Similarly the percentage for clothing at this lowest possible standard would be 6 per cent both in the small and in the large cities, and the cost of housing 10 per cent in the small cities and 12 per cent in the large cities. Calculating from these percentages, we find that the total cost of existence would be 180 *yen* a year in the small cities, and 200 *yen* in the large cities. The presumable range of these incomes is 120 to 260 *yen* in the small cities and 130 to 270 *yen* in the large cities, according to the different social and physical circumstances of the individuals. The amount left, accordingly, for lighting, heating, and all other items which are indispensable for physical welfare, together with all those relating to intellectual, moral, and religious development, would be only 30 *yen* in the small cities and 32 *yen* in the large cities. In the present generation a life without these things cannot be called living; it is nothing more than a bare existence, which in the long run will result in physical and spiritual deterioration.

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[17] See page 18.

[18] (1) Belgium: Food 70.8 per cent, income 565 fr. (Zeitschrift des statistischen Bureaus des königlichen Sachsischen Ministeriums des Innern, 1857); (2) Massachusetts: Food 64 per cent, income $300–450 (Massachusetts Bureau of Statistics of Labor, 1885); (3) Saxony: Food 62 per cent, income under 1200 fr. (Zeitschrift, 1857); (4) United States: Food 48 per cent, income $200–400 (18th Report of Commissioner of Labor); (5) United States: Food 44.2 per cent, income $200–400 (More); (6) United States: Food 40.8 per cent, income $400–499 (Chapin).

For efficient living the items relating to education, society, religion, recreation, and saving must not be neglected. Living in a civilized nation must include "a well drained dwelling with several rooms, warm clothing, with some changes of underclothing, pure water, a plentiful supply of cereal food, with a moderate allowance of meat and milk, and a little tea, etc., some education and some recreation, and lastly, sufficient freedom for his wife from other work to enable her to perform properly her maternal and household duties."[19] Judging from the data now in existence, 35 per cent for food would not be too far from the average standard for efficient living in both the small and the large cities in the present generation. This percentage, together with the 11 per cent and 10 per cent for clothing, and 14 per cent and 17 per cent for housing in the small and the large cities respectively, will amount to 860 *yen* and 960 *yen*, the suggested minimum cost of living in the small and the large cities respectively.

The tables on page 142 show the minimum cost of existence and of living according to the efficient standard arranged to show the percentage spent for each item.

In summary, therefore, the results of this study show that in 1913 in the large cities a normal family of 3.3 units with an income less than 200 *yen* could not maintain existence, and with an income less than 960 *yen* could not maintain a standard of efficient living. In the small cities the respective figures are 180 *yen* and 860 *yen*. In short, the minimum cost of living in Japan (Tokyo) is 960 *yen*, and the distribution of this expenditure is 336 *yen* for food, 96 *yen* for clothing, 168 *yen* for housing, and 360 *yen* for other items. This amount of income, if expended in the most economical way, permits the normal mode and scale of activities adjusted not only to the necessity wants, but also in a slight degree to the decency and comfort wants.

Ordinarily the standard of living falls into three broad divisions: that of the poor, of the middle class, and of the rich; each of them again may be subdivided into lower and

[19] Marshall, p. 121.

THE ABSOLUTE STANDARD OF LIVING—"PRIMARY" POVERTY

	Small Cities			Large Cities		
	Per Cent of Total Expenditure	Amount		Per Cent of Total Expenditure	Amount	
		Monthly (*yen*)	Yearly (*yen*)		Monthly (*yen*)	Yearly (*yen*)
Food:						
Minimum		7	84		8	96
Maximum		13	156		14	168
Average	65	10	120	65	11	132
Clothing:						
Minimum		0.24	3		0.25	3
Maximum		1.80	20		1.80	20
Average	6	1	12	6	1	12
Housing:						
Minimum		0.50	6		0.75	9
Maximum		2.50	30		3.25	39
Average	10	1.50	18	12	2	24
Other items:						
Average	19	2.50	30	17	3	36
Total:[20]						
Average	100	15	180	100	17	200

THE EFFICIENT STANDARD OF LIVING

	Small Cities			Large Cities		
	Per Cent	Amount		Per Cent	Amount	
		Monthly (*yen*)	Yearly (*yen*)		Monthly (*yen*)	Yearly (*yen*)
Food:						
Minimum		21	252		24	288
Maximum		29	348		32	384
Average	35	25	300	35	28	336
Clothing:						
Minimum		5	60		5	60
Maximum		11	132		11	132
Average	11	8	96	10	8	96
Housing:						
Minimum		5	60		8	96
Maximum		15	180		20	240
Average	14	10	120	17	14	168
Other items:						
Average	40	27	344	38	30	360
Total:[20]						
Average	100	70	860	100	80	960

[20] Figures in round numbers.

higher. Although these terms are indefinitely used and lack scientific precision, customary usage will justify the following interpretation of the terms. Poor is the term used in a broad sense for all those who are in economic insufficiency. Professor Hollander defines the term thus: "Midway between the modestly circumstanced and the outright dependent are the poor in the sense of the inadequately fed, clad, and sheltered."[21] In Rowntree's definition the term includes both "primary" and "secondary" poverty.[22] The poor, according to my definition of the standard of living, are all those whose income is sufficient to meet only the mode and scale of activities adjusted to the necessity wants (used in the narrow sense), with no allowance for decency, comfort, or luxury wants.

The middle class includes all those whose income, if expended in the most economical way, allows them to enjoy the efficient standard of living. That is, the income is sufficient to maintain the mode and scale of activities adjusted to the decency and comfort wants, besides necessity, but there is no allowance for the luxury wants.

The rich is a term used to designate those higher than the middle class, and includes all those who receive an income greater than that necessary for the maintenance of the efficient standard of living. The surplus is ordinarily spent in luxury, saving, investment, or social betterment.

With this exposition of the term in mind, income limits for the three grades of living in the large cities of Japan may be set approximately as follows:

Class	Grade	Minimum | Maximum
Poor	Low	less than 200 *yen*
	High	200– 700 *yen*
Middle Class	Low	700–1200 *yen*
	High	1200–1800 *yen*
Rich	Low	1800–2500 *yen*
	High	2500 *yen* and over

[21] J. H. Hollander, Abolition of Poverty, p. 2.
[22] Rowntree, Poverty, pp. 86–87.

In the United States the minimum cost of living for 1913 was about $1000 in the large cities.[23] A comparative study of the Japanese and the American cost of living might make an interesting discussion in connection with this chapter, and I hope to make another and more minute inquiry. However, in conclusion the following observations may be made:

(1) The minimum cost of living in Japan—namely, 960 *yen* or $480—is about one half of the American minimum cost of living ($1000).

(2) The purchasing power of Japanese money in Japan, however, is about twice as much as that of American money in America. Consequently 960 *yen* furnishes about as good a livelihood in Japan as $1000 in America.

(3) The habitual use in Japan of cheap but nutritious foodstuffs such as fish, rice, beans, *miso*, *tofu*, and so on, serves to lessen the sum of money expended for food. Cutting down the food expenditure, then, is not so difficult a problem in Japan as it is in America.

(4) The apportionment for rent is much less in Japan, and a lower cost of living as a whole is therefore practicable.

(5) The common belief that the standard of living in Japan is very much lower than in the United States is not scientifically proved. Probably it is a misconception.

(6) The low cost of living does not necessarily mean a low standard of living. The arguments which make no clear distinction between the standard of living and the cost of living are erroneous.

(7) Both a high standard of living and a low cost of living are desirable for economic advancement. But the rate of increase in the cost of living in Japan is and will be much greater than the rate of increase in the standard of living. This is one of the consequences of the transition from the closed national economic stage to the open world economic stage which has taken place so rapidly within the last few decades.

[23] Estimated at "$900 or over," by Chapin, 1907 (p. 246); "more than $600 in Southern cities," by Ryan, 1905 (p. 150); "more than 1000 dollars," by Smart (Ryan, p. 136); "from $800 to $900" by More (p. 270).

GLOSSARY

Ame—Honey-like jelly made of wheat.
Awase—Medium weight garment, lined.
Bancha—Inferior kind of green tea.
Daikon—Kind of garden radish.
Futakoori—Kind of silk fabric woven with threads of two strands.
Futoori—Kind of thick coarse fabric.
Go—0.1 *sho*, 0.04765 United States standard gallon, or 1.2705 gill (United Kingdom). (1 pint = 3.14 *go*.)
Goishicha—Kind of compressed tea.
Gomanoyu—Vegetable oil made of Semanium Orientalis.
Gyokuro—Superior kind of green tea.
Habutaye—Kind of glossy silk fabric.
Hakama—Kind of skirt.
Hakamaji—Skirt cloth.
Hakimono—Clogs and sandals.
Hakucha—Kind of compressed tea.
Haori—Kind of coat to wear over the main garment (*wataire*, *awase*, or *hitoye*).
Hitoye—Light garment, not lined.
Itoori—Kind of silk fabric with fine twisted threads.
Jyuban—Kind of underwear, combination suit.
Kabe—Mud wall.
Kaiki—Kind of glossy silk fabric.
Kasaji—Umbrella cloth.
Kasuri—Cloth with minute marks of various forms.
Katsubushi—Dried flesh of bonito, a kind of condiment.
Kimono—Clothing, garments.
Kin—160 *momme*, 1.323 pounds.
Kobaikaiki—Kind of silk fabric.
Koku—100 *sho*, 4.96 bushels.
Konnyaku—Kind of edible root, something like taro.

Koshihimo—Smaller sash tied round hip, keeping dress in place.

Miso—The most widely used food preparation, made of wheat, beans, and salt. It forms a substance something like soft cheese.

Myoga—Edible plant (Gingiber Mioga).

Nanako—Kind of silk fabric woven with threads of three strands.

Negi—Onion, something like spring onion.

Obi—Sash.

Obiage—Smaller sash tied around hip, keeping in place the larger sash.

Obiji—Sash cloth.

Obitome—Smaller sash used to fasten and support the larger sash; generally a fancy buckle is attached.

Oshiire—Kind of closet.

Rekicha—Kind of compressed tea.

Ro—Kind of gauze.

Saké—National strong liquor brewed from rice; it contains about 15 per cent of alcohol.

Sen—0.01 yen, about ½ cent.

Sencha—Ordinary green tea.

Sho—10 *go*, 0.4765 United States standard gallon, 0.39703 gallons (United Kingdom), 1.8 litre.

Shoyu—Kind of sauce made of beans and barley with plenty of salt.

Sukiya—Thin silk fabric for making summer garments.

Sun—1/10 *shaku*, 1.49 inches.

Tabi—Kind of sock, close-fitting covering for the feet, made by sewing together pieces of cloth.

Takuwan-zuke—Kind of pickle, tsukemono, which was first prepared by a priest named Takuwan.

Tan (square measure)—0.245 acre, 300 *tsubo*.

Tan (linear measure)—280 *sun*, 11.6 yards.

Tōfu—Preparation made of bean curd hardened by mixing with a small quantity of the brine left after the deliquescence of salt (bean jelly).

Tokonoma—Alcove in the parlor; regarded as the seat of honor.

Tsukemono—Vegetables, generally radish and turnip, pickled in a mixture of salt and rice bran.
Tsumugi—Kind of pongee.
Umé—Variety of plum (prunus mume).
Umeboshi—Plums (*ume*) pickled in salt.
Uba—Skin of bean curd.
Wataire—Padded garment.
Woroncha—Kind of black tea.
Yakifu—Preparation made of wheat ground whole, something like a cracker.
Yen—100 *sen*, about 50 cents (7.5 dg. fine gold.)

VITA

Kokichi Morimoto was born on March 4, 1879, in Japan. He received his high-school education in Tokyo. He entered the Imperial College of Sapporo (six years' course) in 1895, graduating from the college with the degree of Gakushi (Master of Arts) in 1901. He spent the next two years in teaching political economy in the North Japan College, Sendai. He entered Johns Hopkins University in 1904, pursuing studies in history, political economy, and political science for two years. In 1908 he was appointed associate professor of economics in Tohoku Imperial University, Sapporo, Japan, and taught political economy for seven years. In 1915 he was sent by the Imperial Japanese Government to the United States to make an investigation in political economy. He entered the department of political economy of the Johns Hopkins University, and was Fellow by Courtesy in 1915–16. He received the degree of Doctor of Philosophy in 1916.